



Digitized by the Internet Archive
in 2024 with funding from
University of Toronto

<https://archive.org/details/39282908020034>

273

Government Publications

Catalogue no. 75-001-XPE



PERSPECTIVES

ON LABOUR AND INCOME

SPRING 2000

Vol. 12, No. 1

- RRSPs
- EARNINGS OF LAWYERS
- GAMBLING UPDATE
- YOUNG VOLUNTEERS
- SCHOOL-TO-WORK
- LONG HOURS AND HEALTH



Statistics
Canada

Statistique
Canada

Canada

At Your Service...

Data in many forms

Statistics Canada disseminates data in a variety of forms. In addition to publications, both standard and special tabulations are offered. Data are available on the Internet, compact disc, diskette, computer printouts, microfiche and microfilm, and magnetic tape. Maps and other geographic reference materials are available for some types of data. Direct online access to aggregated information is possible through CANSIM, Statistics Canada's machine-readable database and retrieval system.

Statistics Canada's Regional Reference Centres in Canada's major cities

Halifax	(902) 426-5331	Regina	(306) 780-5405
Montréal	(514) 283-5725	Edmonton	(780) 495-3027
Ottawa	(613) 951-8116	Calgary	(403) 292-6717
Toronto	(416) 973-6586	Vancouver	(604) 666-3691
Winnipeg	(204) 983-4020		

You can also visit our World Wide Web site: <http://www.statcan.ca>

Toll-free access is provided for all **users who reside outside the local dialing area** of any of the Regional Reference Centres.

National enquiries line	1 800 263-1136
National telecommunications device for the hearing impaired	1 800 363-7629
Order-only line (Canada and United States)	1 800 267-6677
Fax order-only line (Canada and United States)	1 877 287-4369

Ordering/Subscription information

This and other Statistics Canada publications may be purchased from local authorized agents and other community bookstores, the Statistics Canada Regional Reference Centres, or from:

Statistics Canada
Operations and Integration Division
Circulation Management
120 Parkdale Avenue
Ottawa, Ontario
K1A 0T6

Telephone: 1 (613) 951-7277 or 1 800 700-1033
Facsimile: 1 (613) 951-1584 or 1 800 889-9734
E-mail: order@statcan.ca

Standards of service to the public

Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner and in the official language of their choice. To this end, the agency has developed standards of service which its employees observe in serving its clients. To obtain a copy of these service standards, please contact your nearest Statistics Canada Regional Reference Centre.

PERSPECTIVES

ON LABOUR AND INCOME

■ Departments

- 3 Forum
- 5 Highlights
- 57 What's new?
- 67 Key labour and income facts
- 85 In the works

■ Articles

9 RRSPs in the 1990s

Ernest B. Akyeampong

This overview examines the use of RRSPs in the 1990s. It looks at participation, contributions, unused room and withdrawals from RRSP savings.

16 Earnings of lawyers

Abdul Rashid

Earnings of lawyers continue to exceed the overall average. This study presents a profile of lawyers and highlights the changes that have taken place in their demographic characteristics between 1970 and 1995, and in their earnings between 1980 and 1995.

29 Update on gambling

Katherine Marshall

This note updates national and provincial data for most charts and tables published in two previous *Perspectives* articles on gambling.

36 Youth volunteering on the rise

Frank Jones

This article reveals what types of volunteer organizations attract young people, and considers some factors that may have encouraged growth in youth volunteering, including changes in the labour market.

Perspectives on Labour and Income (Catalogue no. 75-001-XPE; aussi disponible en français: *L'emploi et le revenu en perspective*, n° 75-001-XPJ au catalogue) is published four times a year under the authority of the Minister responsible for Statistics Canada. ©Minister of Industry 2000. SUBSCRIPTION RATES: \$58 a year in Canada, US\$58 for all countries outside Canada. Single issue \$18 in Canada, US\$18 for all countries outside Canada. ISSN: 0840-8750. **All prices exclude sales tax.**

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any other means, electronic, mechanical, photocopying, recording or otherwise, without prior written permission from Licence Services, Marketing Division, Statistics Canada, Ottawa, Ontario, Canada K1A 0T6.

Indexed in the *Canadian Index*, *Canadian Periodical Index*, *P.A.I.S. International* and *Sociological Abstracts*, and available online in *Canadian Business and Current Affairs* and *Employee Benefits Infosource*. Also indexed in French in *L'Index de l'Actualité* and *Point de Repère*.



PERSPECTIVES

ON LABOUR AND INCOME

■ Editor-in-Chief

Ian Macredie
(613) 951-9456
ian.macredie@statcan.ca

■ Managing Editor

Henry Pold
(613) 951-4608
henry.pold@statcan.ca

■ Editors

Catherine Hardwick
Bruce Rogers

■ Data Services

Pierre Bérard
Joanne Bourdeau
Laura Fraser
Mary McAuley

■ Production and Composition

Heather Berrea
Cynthia Fortura
Diane Joannis
Annamma John
Ann Trépanier

■ Printing

Dissemination Division

43 The school-to-work transition

Geoff Bowlby

Using data from the Labour Force Survey, this article compares school and work activities, as well as the unemployment and part-time employment rates, of students and non-students. (Adapted from the Autumn 1999 issue of *Labour Force Update*.)

49 Long working hours and health

Margot Shields

Workers who are spending longer hours on the job may be putting certain aspects of their health at risk. For some of these people, changing to a substantially longer work week may increase the chances of weight gain, smoking or alcohol consumption. (Adapted from an article in the Autumn 1999 issue of *Health Reports*.)

Symbols

The following standard symbols are used in Statistics Canada publications:

..	figures not available
...	figures not appropriate or not applicable
-	nil or zero
--	amount too small to be expressed
p	preliminary figures
r	revised figures
x	confidential to meet secrecy requirements of the Statistics Act

The paper used in this publication meets the minimum requirements of American National Standard for Information Sciences – Permanence of Paper for Printed Library Materials, ANSI Z39.48 – 1984.

Forum

From the Managing Editor

■ Welcome to the Year 2000! We at *Perspectives* are pleased to have experienced no problems with the Y2K rollover. It is "business as usual" as we continue to provide our readers with the most up-to-date and accurate statistics and analysis concerning Canada's employment and income situation.

Our staff, as members of the Labour and Household Surveys Analysis Division, have recently updated the *Labour Market and Income Data Guide* (see also the "What's new?" section in this issue).

This popular reference tool describes most of the major Statistics Canada surveys related to labour or income. It notes survey coverage, typical uses of the data, related publications and hypothetical case studies for most sources. The guide also furnishes a list of relevant contact persons, Statistics Canada Regional Reference Centres and depository libraries.

Another update has also been completed. The "In depth" bin on the Statistics Canada website (www.statcan.ca) now provides an archive of feature articles from past issues of our various analytic periodicals. In addition, the navigation and links have been enhanced. We invite you to have a look.

Perspectives' first issue of 2000 includes a timely article on RRSP use in the 1990s; an update on our popular gambling article; an analysis of the effects of long working hours on health; an earnings profile of lawyers; a summary of youth volunteering; and an article on the transition from school to work.

Rounding out this issue in "Key labour and income facts" is an overview of the major sources for labour and income data. Over the years, "Key labour" has highlighted statistics and analyses from a wide variety of surveys and sources. However, it has been some time since we have provided a summary of the many surveys that provide the basis for monitoring economic conditions. Thus, this issue offers a brief description of the Labour Force Survey, the Survey of Household Spending, the Survey of Labour and Income Dynamics and the census, to name a few. Also included are illustrative charts and analysis, along with the name of a contact person or client service. We hope you find this useful.

Henry Pold
Managing Editor
E-mail: henry.pold@statcan.ca

Perspectives

We welcome your views on articles and other items that have appeared in *Perspectives*. Additional insights on the data are also welcome, but to be considered for publication, communications should be factual and analytical. We encourage readers to inform us about their current research projects, new publications, data sources, and upcoming events relating to labour and income.

Statistics Canada reserves the right to select and edit items for publication. Correspondence, in either official language, should be addressed to: Bruce Rogers, "What's new?" *Perspectives on Labour and Income*, 9th floor, Jean Talon Building, Statistics Canada, Ottawa K1A 0T6. Telephone (613) 951-2883; fax (613) 951-4179; e-mail: bruce.rogers@statcan.ca.

DISCOVER

labour market trends in seconds

When you need a snapshot of the labour market

...when you need quick answers or in-depth analysis

...when you need to see historical movements

...when you need labour-related data for a presentation or report

...you'll find that the *Labour Force Historical Review on CD-ROM* is the perfect solution.

This easy-to-use CD-ROM, issued annually, lets you discover labour market patterns in seconds!

Incorporating a user-friendly data browser, the *Labour Force Historical Review on CD-ROM* is an essential tool providing:

Accurate, timely data...

- ✱ actual and seasonally adjusted data series
- ✱ on a monthly or annual basis

...plus historical information...

- ✱ over 20 years of data (from 1976 to 1999)



- ✱ allowing you to quickly spot trends as you browse different chart displays

...in a tremendously useful format!

- ✱ with thousands of cross-classified data series

- ✱ and the functionality for easy export of the data into any spreadsheet package for data manipulation
- ✱ plus effortless analysis of this large library of multi-dimensional statistics

At the click of a mouse, access key variables, such as:

- ✱ employment and unemployment levels and rates
- ✱ demographic characteristics including age, sex, educational attainment and family variables
- ✱ national, provincial, metropolitan areas and economic regions
- ✱ industry, occupation, wages, union membership, job tenure
- ✱ workplace size and hours worked ...and much more.

As researchers, economists, analysts, consultants and planners in both private enterprise and the public sector, you will value this comprehensive information resource for your labour-related questions, analysis or forecasting.

For more detailed information on this CD-ROM, visit our Web site at <http://www.statcan.ca/english/ads/71F0004XCB/index.htm>

The *Labour Force Historical Review on CD-ROM* (catalogue no. 71F0004XCB) is available for only \$195 (plus either GST/PST or HST) in Canada and US \$195 outside Canada.

To order the CD ROM, CALL 1 800 267-6677, FAX 1 877 287-4369 or MAIL your order to Statistics Canada, Dissemination Division, Circulation Management, 120 Parkdale Avenue, Ottawa, Ontario, Canada, K1A 0T6. You may also order by E-MAIL: order@statcan.ca or contact your nearest Statistics Canada Regional Reference Centre: 1 800 263-1136.

Highlights

In this issue

■ RRSPs in the 1990s

... p. 9

- The proportion of taxfilers with RRSP room (the eligibility rate) increased annually from 1991 (the year of relevant changes to the *Income Tax Act*) to 1997: from roughly 74% to a little over 81%.
- Similarly, the proportion of eligible taxfilers putting money into normal RRSPs (the participation rate) moved from 32.1% to 36.4%.
- Average contributions witnessed steady annual growth, rising from just around \$3,000 per contributor in 1991 to over \$3,900 in 1997, an increase of 31%. Total RRSP contributions rose from \$13.5 billion to \$24.1 billion.
- The growth from 1996 to 1997 in both average and total contributions was much less than in previous years, however.
- In spite of a recent slowdown in the growth of unused RRSP room, only 11% of eligible taxfilers—mostly those with incomes of \$80,000 or over—used 95% or more of their room in 1997.

■ Earnings of lawyers

... p. 16

- Compared with 14% of all earners aged 25 and over in 1995, over half of lawyers were self-employed. On the whole, self-employed workers earned 2% less than employees. Lawyers with their own practice earned 41% more than those working for others.
- At \$75,200, lawyers earned 146% more than the overall average of \$30,600 and 71% more than workers with a university degree in a discipline

other than law. Their longer work hours accounted for about 25% of the difference between their average earnings and the overall average.

- Over half of all workers aged 25 and over earned less than \$30,000, and less than 2% earned \$100,000 or more. Comparable proportions for lawyers were 24% and 23%.
- Between 1970 and 1995, the number of earners aged 25 and over increased by 77%, men by 41% and women by 154%. The number of lawyers increased by 258%; that of men in the profession did so by 161% and that of women, by an extraordinary 2,303%.
- Between 1980 and 1995, overall real average earnings fell 4%. Men lost 7%, while women gained 15%. In the case of lawyers, men and women gained 11% and 41%, respectively. However, because of the surge in the number of young female lawyers with lower earnings, average earnings of lawyers increased only 6%.

■ Update on gambling

... p. 29

- Wagers on non-charity gambling rose from \$2.7 billion in 1992 to \$7.4 billion in 1998, a 170% increase.
- Casinos have become the largest generator of gambling revenue, having surpassed video lottery terminals and lotteries.
- Average expenditure per participating household increased from \$425 in 1996 to \$460 in 1998.
- In contrast to 1992, when most gambling-related jobs were found in Western Canada, the bulk of employment in this industry in 1999 had shifted to Quebec (19%) and Ontario (48%).

- While full-time hourly earnings of employees in the industry have increased considerably, they still lagged the overall average in 1999.

■ Youth volunteering on the rise

... p. 36

- Between 1987 and 1997, the percentage of youth volunteering almost doubled, growing from 18% to 33%. The growth was especially strong in Ontario and Saskatchewan.
- Rising school enrolment rates were partly responsible for the growth, though the growing inclination to volunteer, especially by full-time students, was the main contributing factor.
- Multipurpose groups and service club organizations claimed the largest share of young volunteers. These include multipurpose women's groups, native and ethnic organizations, and bodies such as the Red Cross, Salvation Army and YM/YWCA.
- Full-time students were more inclined than other young people to volunteer for job-related reasons, although this was also an important motive for other youths.
- A large majority of youths reported the following benefits from their volunteering experiences: improved interpersonal skills, communication skills, knowledge, and organizational and managerial skills.

■ The school-to-work transition

... p. 43

- Between 1989 and 1993, the proportion of 15-to-24 year-olds who were in school and not working increased from 29% to 38%. By 1998, it had grown slightly, to 40%.
- In 1989, about 22% of young people were going to school and working at the same time. This changed little over the 1990s, despite an increase in school attendance.

- Some 37% of young people were out of school and working in 1989. This proportion fell dramatically during the early 1990s, hitting 28% by 1993, where it remained for the next five years.

- The average length of the school-to-work transition was eight years in 1998 (beginning at age 16 and ending at age 23), following a pattern set in 1992. The transition had taken just six years (from age 16 to 21) in 1985.

- In 1996, compared with about 86% of postsecondary graduates, only two-thirds of high school graduates had found full-time work within a year.

■ Long working hours and health

... p. 49

- Switching from a standard 35 to 40 hours to a longer work week between 1994-95 and 1996-97 increased the risk of certain negative effects on workers' health, according to data from the National Population Health Survey (NPHS).
- For example, the odds of experiencing an unhealthy weight gain during that two-year period were twice as great for men whose hours of work had increased by 1996-97 than for those who continued to work standard hours.
- Men who changed from standard to long hours had more than twice the odds of an increase in daily smoking than men who continued to work standard hours; the corresponding odds for women were more than four times higher.
- Among female workers, those who changed from standard to long hours had higher odds of increased weekly alcohol consumption. Men's change in hours was not significantly related to increased drinking.
- Spending more time on the job was apt to reduce time available for exercise. Yet surprisingly, an increase in working hours was not significantly related to a decrease in physical activity for either men or women.

■ What's new?

... p. 57

■ Just released

Financial Performance Indicators for Canadian Business

Cohort Flow and the Consequences of Population Ageing, an International Analysis and Review

"The labour market in the 1990s," *Canadian Economic Observer*

"Innovation in the engineering services industry," *Services Indicators*

Report on the Demographic Situation in Canada

Labour Market and Income Data Guide

Canada: A Portrait

Understanding the Innovation Process: Innovation in Dynamic Service Industries

Innovation, Training and Success

The Evolution of Pension Coverage of Young and Prime-aged Workers in Canada

Differences in Innovator and Non-innovator Profiles: Small Establishments in Business Services

Labour Force Update

Changes to CANSIM data

Supplementary measures of unemployment

Workplace and Employee Survey

Employment Insurance statistics program

Labour Force Historical Review

Income Trends in Canada

Low Income Cutoffs

Should the Low Income Cutoffs be Updated?—A Discussion Paper

A Comparison of the Results of the Survey of Labour and Income Dynamics (SLID) and the Survey of Consumer Finances (SCF), 1993-1997: Update

Bridging Two Surveys: An Integrated Series of Income Data From SCF and SLID, 1989-1997

The Persistent Gap: New Evidence on the Canadian Gender Wage Gap

Retirement Income Programs: An Inventory of Data/Information Available at Statistics Canada

Pension Plans in Canada, January 1, 1998

Homeowner Repair and Renovation Expenditure in Canada, 1998

Survey of Household Spending

■ Upcoming Conferences

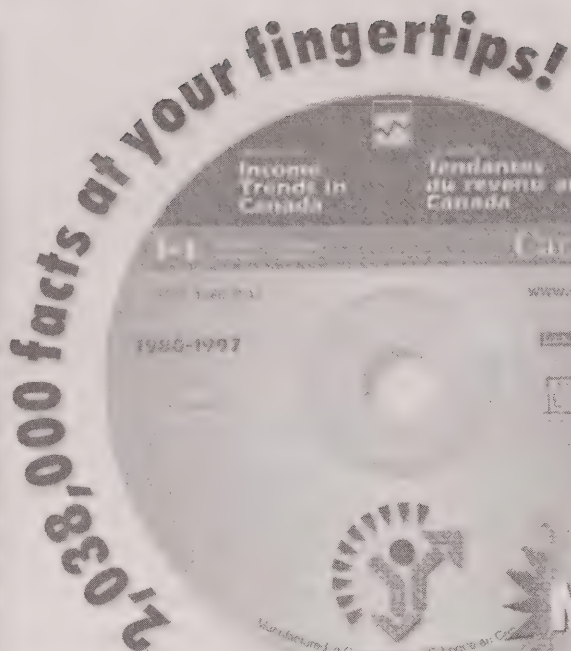
Statistics Canada, Economic Conference 2000: Expanding Horizons: Canada in an International Context

International Conference on Establishment Surveys—II

Canadian Rural Restructuring Foundation and Statistics Canada: The New Rural Economy: Options and Choices

Perspectives

Income Trends in Canada



In these times of budget challenges, it is more crucial than ever before to understand income trends of Canadians

With *Income Trends in Canada*, tracking and understanding developments in Canadian incomes is easy!

Use this CD-ROM to view trends on your computer screen with one mouse click. Find what you need

quickly. Create your own tables. Chart income data. *Income Trends in Canada* is an essential addition to your Statistics Canada library.

Get the overall picture with nearly two decades of data for Canada, the provinces and 15 metropolitan areas

For \$195, you will find everything you need to know about income trends covering 1980 to 1997, through two

recessions and recovery periods! Get accurate and reliable statistics about:

- ▶ income from employment... and other sources
- ▶ taxes
- ▶ impact of government transfers on family income
- ▶ differences in earnings between women and men
- ▶ income of Canada's seniors
- ▶ income inequality and low income
- ▶ and a lot more!



Order *Income Trends in Canada* TODAY

(catalogue number 13F0022XCB) for \$195 in Canada (plus **either** GST and applicable PST or HST) and US\$195 outside Canada. To order, CALL 1 800 267-6677, FAX 1 877 287-4369 or MAIL: Statistics Canada, Circulation Management, Dissemination Division, 120 Parkdale Avenue, Ottawa, Ontario, Canada, K1A 0T6. You may also order by E-MAIL: order@statcan.ca or contact your nearest Statistics Canada Regional Reference Centre: 1 800 263-1136.

RRSPs in the 1990s

Ernest B. Akyeampong

The last major changes to the *Income Tax Act* as it relates to retirement savings were implemented in 1991. Two changes in particular were aimed at increasing “normal” registered retirement savings plan (RRSP) contribution opportunities. Under the new rules, normal RRSP tax-exempt deduction limits were increased. In addition, unused room from previous years (forfeited under the old rules) could be carried forward (initially for up to seven years, but subsequently amended to indefinitely) for future use. (See *Data sources and definitions*.)

This overview examines the use of RRSPs in terms of participation since 1991, contributions, unused room, and withdrawals. Since tax rates remained largely unchanged between 1991 and 1997, changes in the data reflect primarily changes in the economy and changes in behaviour. Differences by various demographic groups are also highlighted.

A brief description of the 1991-to-1997 economic environment, especially the behaviour of variables most apt to affect RRSP contributions and withdrawals, provides a context for this review. In 1991, the economy was in the midst of a recession and unemployment was high. Since then, the economy and employment have experienced sustained growth. Over the period, the inflation rate remained low (averaging less than 2% annually) and the Central Bank rate fell from roughly 9% to about 3.5%. Gains in weekly earnings were also modest (around 2% per year) and average family income was virtually unchanged in real terms. Why RRSP indicators have behaved as they have, however, is left to future economic studies.

Ernest B. Akyeampong is with the Labour and Household Surveys Analysis Division. He can be reached at (613) 951-4624 or akyeern@statcan.ca.

Immediate effect of legislative changes

A “before and after” comparison of the effect of legislative changes on normal RRSPs is difficult, mainly because of changes in the reporting system. For example, while it is now possible to isolate normal RRSPs from rollovers, such was not the case prior to 1991. Also, the meaning and measurement of RRSP room available to taxfilers have changed as a result of amendments to the Act, making it impossible to estimate the immediate effect of legislative changes on RRSP participation or unused room. What can be said is that data on total RRSP contributors and total contributions (that is, normal RRSPs, spousal and retiring allowance rollovers) suggest that the immediate effects of the legislative changes may have been substantial. Even though both 1990 and 1991 were recession years, the number of taxfilers contributing to RRSPs jumped by 14% between these two years, compared with a 1% decline a year earlier. Total contributions increased by 30%, compared with a 13% decline a year earlier (Table 1).¹

Table 1: RRSP contributions*, 1989 to 1991

	Taxfilers	Contributors	Contributions
	millions	millions	\$ billions**
1989	17.4	4.1	12.9
1990	18.0	4.0	11.2
1991	18.4	4.6	14.6

Source: Small Area and Administrative Data Division

* Normal RRSPs and allowable rollovers.

** Current dollars.

Data sources and definitions

Most of the data used in this study are from the PA/RRSP file of the Pensions and Wealth Surveys Section, Income Statistics Division.

The PA/RRSP file is a multiyear data file that holds, for each taxfiler, information on retirement savings behaviour since 1991—for example, contributions, contribution room, pension adjustment and past service pension adjustment. Age, sex and province or territory of residence are also included.

The data in this report were produced from a 2% sample of all taxfilers. The 1997 data include information from tax returns received and processed by Revenue Canada as of October 26, 1998; information for late filers will change the numbers slightly. (Late filers have historically represented about 3% of total returns.) Each year, the PA/RRSP file is updated with preliminary data for the most recent tax year and revised data for the previous tax year.

The Small Area and Administrative Data Division provided data on total contributors and total contributions for 1989 through 1991.

Earned income: income qualifying for RRSP purposes: net income from employment (both paid work and self-employment), rental property, alimony and maintenance arrangements and certain disability or loss-of-income plans, less some employment expenses such as union dues, and alimony and maintenance payments.

Home Buyers' Plan: implemented in February 1992 to help Canadians finance the purchase or construction of a home. Withdrawals under the HBP are still considered part of the participant's RRSP assets, but are temporarily redirected from traditional investments to a stake in the individual's home. Amounts withdrawn must be fully repaid to the home buyer's RRSP in equal, annual instalments within 15 years. Missed or insufficient payments are treated as regular cash withdrawals and taxed accordingly (for more information, see Frenken, 1998).

Pension adjustment (PA): calculated value of the annual pension accrual in a registered pension plan (RPP) or a deferred profit sharing plan (DPSP). The PA decreases the RRSP deduction limit.

Rollover: transfer of eligible income to a registered retirement savings plan (RRSP) over and above the standard deduction limits. It includes retiring allowances, within limits. (A 1995 amendment now allows rollovers only for service prior to 1996.) It also includes periodic payments from RPPs and DPSPs to a spousal RRSP from 1989 to 1994. It does not include the direct transfer of pension payments from Old Age Security, Canada and Quebec Pension Plans, RPPs or DPSPs to the taxfiler's own RRSP as of 1990, the year such rollovers were disallowed.

RRSP deduction limit: maximum amount, including unused room from previous years, that can be deducted from income (for income tax purposes) for an RRSP contribution in any year. The annual new room is either a dollar amount or 18% of earned income, whichever is lower. The dollar limit for those not participating in an RPP or DPSP was \$11,500 for 1991, \$12,500 for 1992 and 1993, \$13,500 for 1994, \$14,500 for 1995 and \$13,500 for 1996 and 1997. For those who belong to an RPP or DPSP, their RRSP deduction limit is reduced by the amount of their pension adjustment.

RRSP normal contribution: amount deducted for contributions to the RRSP of the taxfiler or the taxfiler's spouse that is within the deduction limit of the contributor and that reduces his/her RRSP room. It excludes spousal rollovers, last allowed in 1994, and retiring allowance rollovers, currently being phased out.

RRSP withdrawal: income originating from RRSPs in the form of lump-sum withdrawals or annuities; also included are amounts not repaid to the Home Buyers' Plan (that is, the HBP shortfall).

Unused RRSP room: amount of the RRSP deduction limit that is not claimed by the taxfiler. Unused room may be carried forward indefinitely.

RRSP use since 1991

RRSP use following the legislative changes can be tracked with Statistics Canada's PA/RRSP file (see *Data sources and definitions*), which separates normal RRSP contribu-

tions from total RRSP contributions. In addition, one can track changes in eligibility and participation rates, average and total amounts contributed, unused room and withdrawals.

Slow but sustained growth

Although all the major indicators show sustained growth in RRSP use in the 1990s, the growth rates from 1992 onward (at least with respect to contributors and contributions) have been slower than was

Table 2: Normal RRSP contributions, 1991 to 1997

	Tax-filers millions	Eligibility rate %	Participation rate %	Contributors millions	Contributions*	
					Average \$	Total \$ billions
1991	19.5	73.9	32.1	4.6	3,005	13.5
1992	19.7	76.8	31.4	4.7	3,072	14.6
1993	20.1	78.1	32.1	5.0	3,318	16.7
1994	20.4	79.0	32.7	5.3	3,495	18.4
1995	20.8	80.0	34.6	5.8	3,649	21.0
1996	21.1	80.6	35.8	6.1	3,869	23.5
1997**	20.7	81.1	36.4	6.1	3,936	24.1

Source: PA/RRSP file

* 1997 constant dollars.

** 1997 data exclude late filers.

the case in 1991, the year in which the legislative changes were implemented. The eligibility rate (the proportion of taxfilers with RRSP room) has, for example, increased annually since 1991. From approximately 74% in 1991, the rate rose to a little over 81% in 1997 (Table 2).² Much of the increase, though, occurred in the first two years following implementation of the legislative changes. Increases since then have been marginal.

That the overall eligibility rate for each year is less than 100% is not surprising. Eligibility depends heavily on earned income (primarily income from employment), and several million taxfilers report zero income of this nature each year. A recent study using 1996 taxation data, for example, found an expectedly low eligibility rate (58%) for the 8.5 million taxfilers whose major source of income that year was from government transfers, pension income, et cetera—income sources not eligible for RRSP purposes—but a high (95%) rate for employees and the self-employed (Akyeampong, 1999).³ Because of the carry-forward provision, many retire with unused RRSP room, which can be used even though they may no longer have current income eligible for the accumulation of new room. This room is forfeited once the taxfiler and his or her spouse reach age 70.

Similarly, the proportion of eligible taxfilers putting money into normal RRSPs (participation rate), after falling from 32.1% to 31.4% between 1991 and 1992, regained its level in 1993 and increased steadily to reach 36.4% in 1997.

Although the overall participation rate has inched up beyond one-third of eligible taxfilers, rates posted by various groups of taxfilers are different. For example, an earlier study showed a higher rate for employees (43.3%) than for self-employed taxfilers (34.6%). Those who reported their major income source as government transfers, pension income and so on had a much lower rate (20.6%) (Akyeampong, 1999).

The one-third participation rate also masks differences in patterns of various taxfilers (see *Participation rates vary*). A recently released

Table 3: Normal RRSP room: used and unused

	Room	Contributions \$ billions*	Unused room	
			Amount	Ratio %
1991	46.7	13.5	33.3	71.2
1992	78.5	14.6	63.9	81.4
1993	108.1	16.7	91.4	84.5
1994	137.0	18.4	118.6	86.5
1995	163.6	21.0	142.5	87.1
1996	186.7	23.5	163.2	87.4
1997**	200.4	24.1	176.4	88.0

Source: PA/RRSP file

* 1997 constant dollars.

** 1997 data exclude late filers.

report based on longitudinal data on taxfilers aged 25 to 64, for example, showed that between 1991 and 1997 over 40% of them made no contribution. It also found that of those who did contribute during the period, only one-quarter did so consistently (that is, each year), while one-third did so occasionally (that is, made a contribution in one, two or three years) (Statistics Canada, 1999).

Average contributions have also witnessed steady annual growth, rising from just around \$3,000 per contributor in 1991 to over \$3,900 in 1997 (see

Average contributions),⁴ an increase of 31%, and much higher than the 4% wage increase in real average weekly earnings during the same period. The slight increase between the recession years of 1991 and 1992 was followed by a substantial rise (8%) in 1993, the first year of economic recovery. In each subsequent year, average contribution growth exceeded earnings increases. Between 1991 and 1997, total RRSP contributions rose from \$13.5 billion to \$24.1 billion; the 79% increase resulted from growth in both the number of contributors and the average amount contributed.

Growth in unused room decelerating

Trends in unused room offer another way of assessing RRSP use. As noted earlier, a major change in 1991 was the permission to carry unused room forward. Tax data show unused room increasing since 1991. That year, approximately 29% of the available \$46.7 billion was used up by taxfilers, leaving unused room of \$33.3 billion (Table 3). By 1997, only about 12% of the available \$200.4 billion had been used up, leaving unused room of \$176.4 billion. In other words, instead of being whittled down, unused room grew—from 71% of available room in 1991 to 88% in 1997.

Participation rates vary

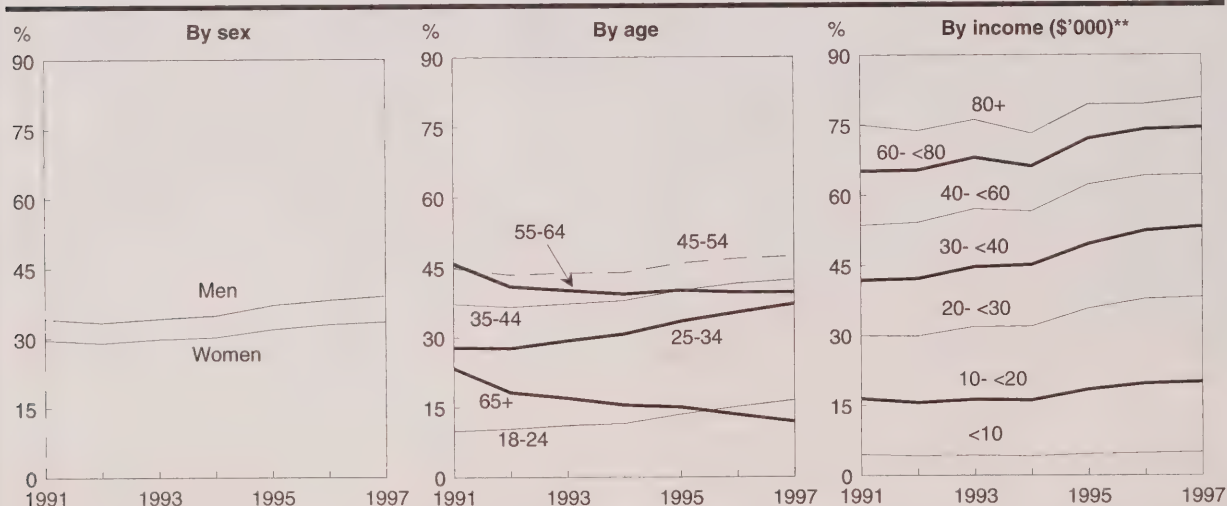
RRSP participation rates of both men and women rose from 1991 to 1997, men's consistently exceeding women's. In 1997, some 39.1% of eligible male taxfilers put money into RRSPs, compared with 33.5% of women.

Participation rates generally rise until age 54 and then decline. Over the period, the rates for all age groups under 55 trended upward, while those for older taxfilers declined. The result was that by 1997 the youth rate (16.5%) surpassed that of taxfilers aged 65 or over (11.9%). In 1991,

the youth rate had stood at 9.9%, less than half the rate for persons aged 65 or over (23.4%).

Participation rates tend to rise with income, as well. For example, in 1997 only one in 20 eligible taxfilers with an annual income of less than \$10,000 put money into RRSPs, compared with 18 in 20 for those with incomes of \$80,000 or more. The participation rate for each of the various income groups during the period, however, registered an upward trend.

RRSP participation rates, 1991 to 1997*



Source: PA/RRSP file

* 1997 rates exclude late filers.

** 1997 constant dollars.

Average contributions

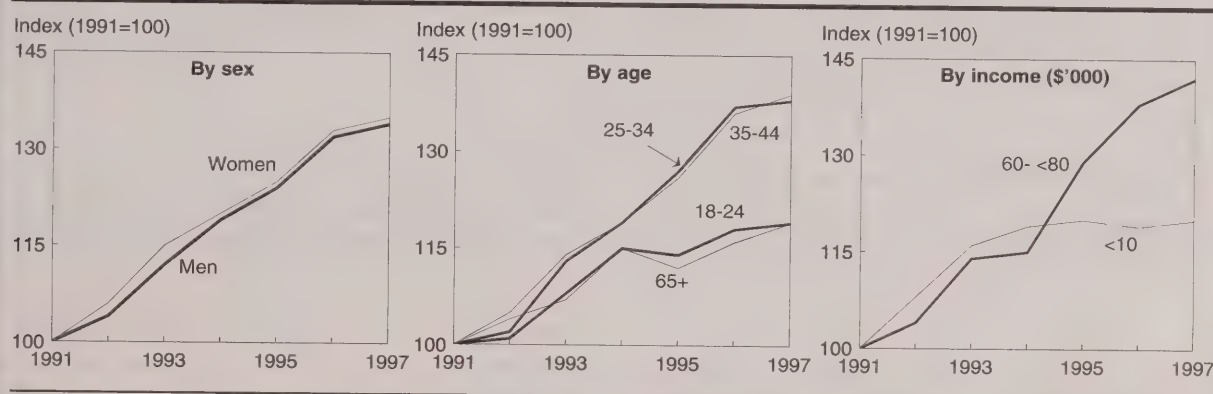
Average RRSP contributions between 1991 and 1997 rose for both sexes, although men's contributions (in line with their higher average earnings) consistently exceeded women's. In 1997, the average male contributor put around \$4,500 into RRSPs, compared with women's \$3,200 (Table). Growth in women's average contribution over the period, however, slightly surpassed that of men, in line with improvements in the female-to-male wage ratio.

Average contributions rise with age. In 1997, for example, the average rose from \$1,600 among young (under 25) contributors to \$4,400 among those aged 65 or over. The

average for each age group edged upward during the period, with the highest growth being recorded for those aged 25 to 44 (a little under 40%), and the lowest for youths and the elderly (65 years or over), each 19%.

Average contributions also rise with income. For example, in 1997 the average for taxfilers with incomes less than \$10,000 was \$1,100, compared with \$9,600 for those whose incomes were \$80,000 or more. The greatest growth in average contributions was registered by those with incomes from \$60,000 to less than \$80,000 (42%), and the least (20%), by those with less than \$10,000.

Growth in average RRSP contributions, 1991 to 1997



Average contribution* by sex, age and income*

	1991	1992	1993	1994	1995	1996	1997 **
	\$						
Total	3,005	3,072	3,318	3,495	3,649	3,869	3,936
Sex							
Men	3,363	3,494	3,767	3,987	4,171	4,428	4,515
Women	2,373	2,506	2,726	2,846	2,962	3,147	3,196
Age							
18 to 24	1,375	1,390	1,481	1,580	1,572	1,620	1,631
25 to 34	2,410	2,465	2,722	2,880	3,065	3,312	3,334
35 to 44	3,036	3,184	3,465	3,625	3,821	4,123	4,209
45 to 54	3,323	3,484	3,709	3,922	4,086	4,307	4,378
55 to 64	3,452	3,613	3,852	4,021	4,147	4,247	4,369
65 and over	3,715	3,873	3,990	4,290	4,177	4,320	4,405
Income							
Less than \$10,000	918	991	1,063	1,088	1,098	1,092	1,101
\$10,000 to 19,999	1,428	1,485	1,616	1,654	1,723	1,776	1,758
\$20,000 to 29,999	1,829	1,905	2,044	2,096	2,256	2,391	2,366
\$30,000 to 39,999	2,361	2,410	2,636	2,673	2,929	3,150	3,164
\$40,000 to 59,999	3,052	3,181	3,468	3,496	3,831	4,189	4,255
\$60,000 to 79,999	4,155	4,333	4,749	4,790	5,359	5,754	5,906
\$80,000 or more	6,871	7,344	7,953	7,613	9,012	9,429	9,572

Source: PA/RRSP file

* 1997 constant dollars.

** 1997 data exclude late filers.

The growth was uneven, though—obviously fastest in the years immediately following implementation of the Act, and considerably slower since.

The sustained growth in unused room is not surprising, as the increase each year surpassed the combined effects of growth in both the number of contributors and the average amounts put into RRSPs. Only a small proportion of taxfilers with RRSP room usually use (almost) all of their room. In 1997, for example, only 11% of all eligible taxfilers—mostly those with incomes of \$80,000 or over—used 95% or more of their room that year (Statistics Canada, 1999).

A couple of factors may have contributed to the recent slowdown in the growth of unused room. For example, in 1996 the dollar limit for new contributions was lowered from \$14,500 to \$13,500. Sustained economic growth may also have encouraged and/or enabled more people to participate or to increase their contributions.

Withdrawal/contribution ratio falls

The following analysis of withdrawal/contribution ratios focuses on persons aged 25 to 64 only, since the contribution patterns of taxfilers younger than 25 or older than 64 are significantly different. RRSP contribution or withdrawal is generally low among youths. Similarly, most of the over 64 year-olds are retired. In this study withdrawals consist of cash, annuity benefits (insignificant for persons under 65) and Home Buyers' Plan shortfalls (that is, HBP withdrawals that were not repaid).

Over the period 1993 to 1997, contributions by 25-to-64 year-olds increased each year, rising from \$15.9 billion to \$22.8 billion (Table 4).⁵ Annual withdrawals also grew between 1993 and 1996 (from \$4.0 billion to \$5.2 billion). The preliminary data for 1997 show \$4.9 billion.

The withdrawal/contribution ratio for this age group rose slightly between 1993 and 1994, but witnessed consecutive sizeable declines since then, falling from 25.5% in 1994 to 21.5% in 1997. That year, for every five dollars put into RRSPs by 25-to-64 year-olds, one dollar was withdrawn, compared with approximately one dollar for every four contributed in 1993.

Table 4: RRSP withdrawal/contribution ratio for taxfilers aged 25 to 64 years, 1993 to 1997

	Contributions	Withdrawals	
		Amount	Ratio
	\$ billions*		%
1993	15.9	4.0	25.3
1994	17.5	4.5	25.5
1995	20.0	4.9	24.4
1996	22.3	5.2	23.4
1997**	22.8	4.9	21.5

Source: PA/RRSP file

* 1997 constant dollars.

** 1997 data exclude late filers.

Summary

The immediate effect of the 1990 RRSP legislation seems to have been substantial. For example, even though 1991 (the year of implementation of the legislative changes) was an economic recession year, the growth in the number of RRSP contributors and contributions that year greatly surpassed that of the pre-1990 years. From 1991 to 1997, concurrent with improvements in the economy and labour market, many RRSP indicators, such as participation rate, number of contributors, average contributions and total contributions, recorded sustained growth, albeit at slower rates for some in the latter part of the period. In contrast, the withdrawal/contribution ratio maintained a downward trend after 1994.

Perspectives

Notes

- 1 The 1990 decline was partly the result of the disallowance that year of rollovers of pension income to individuals' own RRSPs.
- 2 The data for 1997 are preliminary. They exclude late taxfilers (historically, around 3%). Inclusion of data on late filers would certainly raise the number of taxfilers and total contributions for 1997, but the effect on RRSP eligibility and participation rates on the average contribution is uncertain.
- 3 Among the ineligible 5% of employees and self-employed are those whose pension adjustment levels may have exceeded their allowable RRSP room.

Definitions of employees and the self-employed were restrictive in the Akyeampong study. Employees were taxfilers whose major source of gross income was wages and salaries and who reported no self-employment income. They numbered 11.2 million in 1996. The self-employed were taxfilers whose major source of gross income was from self-employment, and who reported no wages or salaries that year. They numbered 1.1 million. The remaining 8.5 million taxfilers' major gross income was from sources not deemed eligible for RRSP purposes; for example, government transfers or pension income. A little more than half of these 8.5 million taxfilers also earned some employment income in 1996, thus making them eligible to contribute to RRSPs that year. Among the 8.5 million taxfilers were those who filed returns only to obtain refundable tax credits.

4 The 1997 figure may change once late returns have been processed.

5 The PA/RRSP file does not include relevant data for earlier years.

References

Akyeampong, E.B. "Saving for retirement: RRSPs and RPPs." *Perspectives on Labour and Income* (Statistics Canada, Catalogue no. 75-001-XPE) 11, no. 2 (Summer 1999): 21-27.

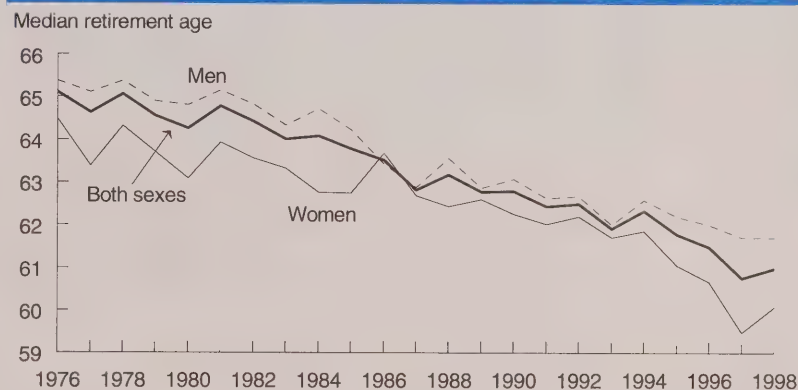
Frenken, H. "The RRSP Home Buyers' Plan." *Perspectives on Labour and Income* (Statistics Canada, Catalogue no. 75-001-XPE) 10, no. 2 (Summer 1998): 38-41.

Statistics Canada. *Retirement Savings through RPPs and RRSPs, 1991 to 1997*. Catalogue no. 74F0002XIB. Ottawa, 1999.

Speaking of retirement...

For more than two decades, the median age of retirement has been dropping. In 1998, the median edged up slightly for the first time since 1994. Whether 1998 signals the beginning of a new trend or just another blip in the long-term pattern remains to be seen.

For an explanation of the methodology used to derive the information on retirement age, see the article by Dave Gower in the Summer 1997 issue of *Perspectives*.



Source: Labour Force Survey

Perspectives

Earnings of lawyers

Abdul Rashid

Average income from employment in 1995 was \$26,500. It varied widely among different occupations, from \$4,300 for sports officials and referees to \$120,600 for judges (Statistics Canada, 1999). Some occupations have maintained a consistently high ranking on the income ladder.¹ This article examines the demographic and earnings profile of one such group: lawyers (see also Rashid, 1999).

Demographic characteristics

Women lawyers are younger

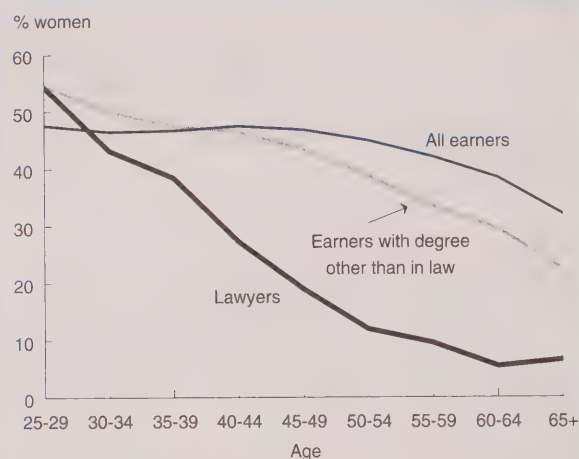
In 1995, some 12,147,500 persons aged 25 and over² worked and received employment income. Almost half (46%) were women. In contrast, only 30% of Canada's 57,700 lawyers were women (Table 1).

Overall, the age profiles of working men and women were similar. The median age of men (41.2) differed by less than a year from the median age of women (40.5). In contrast, women in the legal profession were considerably younger than men. Their median age (36.1) was over 7 years less than that of male lawyers (43.4). They accounted for more than half of all lawyers in the youngest group aged 25 to 29, and only 10% of those 50 years or over (Chart A).

Two major factors account for these sex-age differences. Participation of women in the labour force began to increase sharply in the 1960s, eventually reaching close to parity with men in the younger age groups. This was accompanied by fast growth in the number of women with higher levels of education, which allowed them to make strong inroads into higher paying occupations. Men continued to dominate the older age groups, however. By 1996, the proportion of female lawyers under age 35 (45%) was twice that of male lawyers (22%). In contrast, only 6% of female lawyers were at least 50, compared with 24% of male lawyers.

Abdul Rashid is with the Income Statistics Division. He can be reached at (613) 951-6897 or rashabd@statcan.ca.

Chart A: In 1995, more than half of the youngest lawyers were women.



Source: Census of Canada, 1996

Work patterns of lawyers more intensive

Compared with 78% of all earners 25 years and over, 90% of lawyers worked at least 40 weeks in 1995 (Table 1). Furthermore, irrespective of the number of weeks worked, 95% of lawyers worked mostly full time, compared with 83% of all earners.

Work patterns of men and women differed significantly. Among all earners, 76% of women worked 40 weeks or more, compared with 80% of men. The respective proportions in the case of lawyers were 84% and 93%. The overall proportion of women working mostly part time in 1995 was over three times that of men (27% versus 8%). A similar pattern prevailed among lawyers (8% versus 4%). On the whole, 77% of all male earners and 60% of all female earners worked at least 40 weeks, mostly full time. The respective proportions among lawyers were 91% and 79%.

Table 1: Lawyers and other earners, by selected characteristics, 1995

	All earners			Lawyers			Other university graduates			All others		
	Both sexes	Men	Women	Both sexes	Men	Women	Both sexes	Men	Women	Both sexes	Men	Women
	'000						'000			'000		
Total	12,148	6,588	5,560	57,680	40,175	17,505	2,285	1,237	1,048	9,805	5,311	4,494
Age												
25 to 29	1,650	865	785	6,550	2,990	3,555	383	174	209	1,260	688	572
30 to 34	2,005	1,072	933	10,020	5,690	4,330	397	198	198	1,599	868	731
35 to 39	2,080	1,109	971	9,975	6,150	3,830	370	194	176	1,700	908	791
40 to 44	1,914	1,005	909	10,920	7,950	2,965	360	192	167	1,544	805	739
45 to 49	1,709	909	800	9,535	7,730	1,805	342	194	148	1,358	708	650
50 to 54	1,231	678	553	4,900	4,310	590	219	134	85	1,007	540	467
55 to 59	813	472	341	2,400	2,170	230	115	77	39	695	393	302
60 to 64	471	290	181	1,645	1,550	90	57	40	17	412	248	164
65 and over	275	187	88	1,730	1,615	115	42	33	9	231	152	78
	years			years			years			years		
Median age	40.9	41.2	40.5	41.0	43.4	36.1	39.9	41.3	38.3	41.1	41.1	41.0
Average years of education	13	13	13	19	19	19	18	18	18	12	12	12
Class of worker	'000						'000			'000		
Employee	10,454	5,457	4,997	26,340	15,075	11,270	1,966	1,023	943	8,462	4,419	4,043
Self-employed	1,650	1,122	528	31,330	25,095	6,230	315	214	102	1,303	884	420
Weeks worked												
1 to 13	635	287	349	810	430	385	93	42	51	542	245	297
14 to 26	1,082	537	544	2,465	1,160	1,305	164	71	93	915	465	450
27 to 39	898	472	426	2,225	1,115	1,110	150	62	87	746	408	337
40 to 52	9,533	5,293	4,241	52,175	37,470	14,705	1,878	1,062	816	7,603	4,193	3,410
Work intensity												
Mostly full-time	10,091	6,040	4,052	54,815	38,695	16,120	1,936	1,131	805	8,100	4,869	3,231
Mostly part-time	2,056	548	1,508	2,860	1,475	1,385	348	106	243	1,705	441	1,264
	hours			hours			hours			hours		
Average annual hours	1,609	1,805	1,377	2,198	2,308	1,945	1,736	1,934	1,502	1,576	1,771	1,346

Source: Census of Canada, 1996

On average, men worked 1,805 hours in 1995, about 31% more hours than women (1,377).³ Average annual hours of lawyers were significantly higher. Male lawyers worked 2,308 hours, about 28% more than the average for all male earners. Similarly, female lawyers worked over 1,945 hours, 41% more than the average for all female earners. Thus, the male-female gap in annual hours was lower among lawyers than among earners in general. Work patterns of university graduates with a degree in a discipline other than law were less intensive than lawyers' but more so than the overall average.

Most lawyers self-employed

On the whole, 14% of all earners 25 years and over were self-employed,⁴ while 86% were employees (Table 1). The incidence of self-employment was higher among men (17%) than women (9%). In contrast, more than half (54%) of lawyers were self-employed: nearly two-thirds of men and a little over one-third of women.

Table 2: Average earnings of lawyers and other earners, by selected characteristics, 1995

	All earners			Lawyers			Other university graduates			All others		
	Both sexes	Men	Women	Both sexes	Men	Women	Both sexes	Men	Women	Both sexes	Men	Women
	\$			\$			\$			\$		
Total	30,600	36,800	23,200	75,200	85,100	52,600	44,000	52,700	33,900	27,200	32,700	20,600
Age												
25 to 29	21,700	24,400	18,700	29,700	31,300	28,400	24,800	27,000	23,000	20,700	23,700	17,100
30 to 34	27,500	32,200	22,100	50,400	54,400	45,200	36,900	42,600	31,200	25,000	29,700	19,500
35 to 39	31,200	37,700	23,900	75,200	83,200	62,400	45,100	54,000	35,300	27,900	33,900	21,100
40 to 44	33,700	41,100	25,500	86,600	94,400	65,400	49,900	59,900	38,400	29,500	36,100	22,400
45 to 49	35,500	43,600	26,400	98,900	104,800	73,800	53,200	62,300	41,200	30,600	37,800	22,900
50 to 54	35,800	44,400	25,200	102,800	109,200	55,600	57,200	67,100	41,600	30,800	38,200	22,300
55 to 59	32,500	39,800	22,400	92,700	96,200	59,600	56,100	64,800	38,700	28,400	34,600	20,300
60 to 64	29,100	35,000	19,600	85,100	87,800	37,600	52,300	60,300	33,100	25,700	30,600	18,300
65 and over	22,400	26,100	14,500	76,600	77,100	69,600	40,600	45,800	22,600	18,600	21,300	13,400
Class of worker												
Employee	30,700	37,200	23,700	61,500	70,500	49,400	43,200	51,500	34,200	27,800	33,800	21,100
Self-employed	30,000	34,800	19,900	86,800	93,800	58,200	49,600	58,200	31,500	23,900	27,400	16,600
Weeks worked												
1 to 13	7,000	9,000	5,300	14,100	15,400	12,600	8,100	10,000	6,700	6,800	8,900	5,000
14 to 26	13,200	15,900	10,600	22,700	23,700	21,800	16,000	18,000	14,400	12,700	15,500	9,800
27 to 39	19,100	22,700	15,200	32,000	37,700	26,200	23,300	26,100	21,200	18,300	22,100	13,600
40 to 52	35,200	41,700	27,100	80,500	89,200	58,300	49,900	58,200	39,200	31,300	37,000	24,100
Work intensity												
Mostly full-time	34,300	38,900	27,300	77,600	87,100	54,900	49,100	56,100	39,300	30,400	34,600	24,200
Mostly part-time	12,500	13,000	12,300	28,600	31,600	25,500	15,800	15,400	16,000	11,800	12,400	11,600
Hourly earnings	19.00	20.38	16.87	34.22	36.86	27.02	25.38	27.24	22.56	17.24	18.47	15.34

Source: Census of Canada, 1996

Earnings

Average employment income (earnings) of all workers 25 years and over amounted to \$30,600 in 1995 (Table 2). At \$75,200, the average earnings of lawyers were nearly 146% greater than the overall average and 71% greater than those of other university graduates⁵ (\$44,000).

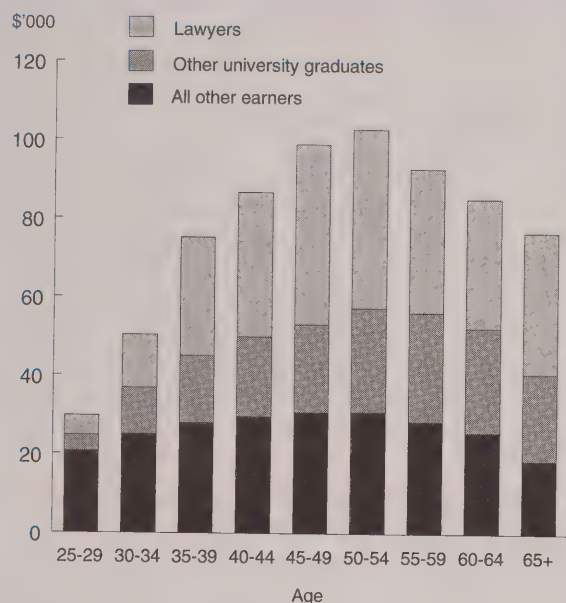
Earnings peak between 50 and 54 years

In general, young workers begin at low levels of earnings. As experience and job training increase, earnings rise and reach a peak. In 1995, workers aged 25 to 29 earned, on average, \$21,700, some 71% of the overall average; those aged 30 to 34 earned \$27,500 (90%). Average employment income peaked at \$35,800 in the 50-to-54 year group.

Earnings of lawyers followed this overall pattern, but with a more pronounced peak (Chart B). Young lawyers aged 25 to 29 earned \$29,700, substantially less than the average for their profession. The relatively low earnings of these young lawyers (and those of other university graduates) may reflect their late entry into the labour force. On average, workers 25 years and over spent 13 years in formal education. In comparison, lawyers spent 19 years, and other university graduates, 18 years.

While the overall change in average earnings from the youngest (25 to 29) to the next age group (30 to 34 years) was 27%, it was 49% for university graduates with degrees in a discipline other than law and 69% for lawyers. In the next age group (35 to 39), workers overall gained 13%, other graduates, 22%, and

Chart B: Lawyers' average earnings increased more rapidly than those of other earners.



Source: Census of Canada, 1996

lawyers, 49%. This pattern of change resulted in a much greater variation by age in the earnings of lawyers and other university graduates.⁶

Earnings and work activity closely related

In 1995, persons 25 years and over who worked less than 14 weeks earned, on average, \$7,000—only 20% of that earned by those who worked at least 40 weeks (\$35,200). Similar differences existed in the case of lawyers (17%) and others with a university degree (16%). The pattern held for men and women. Irrespective of the number of weeks worked, those who worked mostly part time earned \$12,500, or only 37% of the earnings of those who worked mostly full time (\$34,300). Differences were similar for lawyers (37%) and other university graduates (32%).

The distribution of full-time working men and women by number of weeks worked was almost identical. In the case of part-time workers, however, women worked significantly more weeks than men: 59% worked at least 40 weeks, compared with 45% of men. As a result, while the average earnings of full-time working men were 43% higher than those of their female counterparts, average earnings of part-time

workers differed by less than 6%. Similarly, the average employment income of full-time male lawyers (\$87,100) was 59% greater than that of their female counterparts (\$54,900), but that of part-time lawyers was just 24% higher.

While average *annual* earnings of lawyers exceeded the overall average by 146% in 1995, their average *hourly* earnings were higher by 80% (see *Notes and definitions*). Similarly, compared with other university graduates, lawyers earned, on average, 71% more per annum but 35% more per hour. Their longer work hours accounted for an estimated 25% of the difference between their average annual earnings and those of workers overall.

Women earn less

On the whole, average annual earnings of women in 1995 amounted to 63% of the average earnings of men.⁷ This holds true for different groups. Female lawyers earned, on average, 62% of male lawyers' earnings; other female university graduates earned 64% of their male counterparts' earnings. Age and work patterns accounted for a significant part of the disparity in earnings of lawyers and other university graduates by sex.

Although women made up 46% of all earners, they accounted for a relatively small proportion of workers in the lower-earning pre-retirement age groups. This had a somewhat positive effect on their overall average earnings. (Table 3). Other things being equal, had women's age distribution been the same as men's, their average employment income would have been slightly lower (0.6%).

Except for two age groups—50 to 54 and 60 to 64 years—lawyers showed higher-than-average earnings ratios in all age groups. In fact, female lawyers in the youngest age group (25 to 29) earned around 91% of their male counterparts' earnings. However, because women's significant presence among university-educated workers is relatively recent, they are still concentrated in the younger, lower-earning groups. Consequently, men account for greater proportions in the higher-earning age groups. This has a negative effect on the overall average earnings of women. Other things being equal, had female lawyers and other university graduates had the same age distribution as their male counterparts, their average earnings in 1995 would have been higher by 12% and 3%, respectively.

Table 3: Women's earnings standardized for various factors, 1995

		All earners	Lawyers	Other graduates	All others
		\$			
Actual earnings of women		23,200	52,600	33,900	20,600
Actual earnings of men		36,800	85,100	52,700	32,700
Average earnings of women standardized by					
Age	$\Sigma (PAm_i \cdot YAf_j)$	23,100	58,700	34,800	20,500
Weeks worked	$\Sigma (PWm_i \cdot YWf_j)$	24,000	55,900	35,700	21,200
Worked full/ part time	$\Sigma (PFm_i \cdot YFf_j)$	26,000	53,800	37,300	23,100
Weeks and time	$\Sigma (PWFm_i \cdot YWFFf_j)$	26,100	56,900	38,200	23,100
Age, weeks and time	$\Sigma (PAWFFm_i \cdot YAWFFf_j)$	26,400	62,100	39,300	23,000
Ratio of women's to men's earnings					
		%			
Actual		63.0	61.8	64.3	63.0
Standardized		71.7	73.0	74.6	70.3

Source: Census of Canada, 1996

P = Proportion of men in category i
 Y = Average earnings of women in category j
 A = Age group

W = Weeks worked in 1995
 F = Full- and part-time earners
 m_i = Men in an age/weeks/work category
 f_j = Women in an age/weeks/work category

earnings. Average earnings of female lawyers would have been 18% higher and those of other female graduates, 16%. The overall female-to-male earnings ratio would have been 72%, while that for lawyers would have been 73%, and that for other university graduates, 75%.

Overall, compared with an annual earnings ratio of 63%, women's hourly earnings were 83% of men's (Table 4). The corresponding figures for lawyers were 62% and 73%, and for other university graduates, 64% to 83%. Furthermore, while the average hourly earnings of female lawyers under 35 were close to parity with their male counterparts', the ratios were significantly lower in the 50-to-64 year groups. Similarly, the average hourly earnings of other women under 35 with a university degree were at par with their male counterparts'. Overall, women's fewer annual hours accounted for approximately half of the difference between their average

Differences in earnings by sex were due in part to work patterns. Overall, women put in slightly fewer weeks, but a significantly greater proportion of them worked mostly part time. If they had had the same work patterns as their male counterparts, their average earnings would have been 13% greater than their actual earnings. The effect in the case of lawyers was smaller (8%), reflecting the similarity in men's and women's work patterns.

On the whole, if both age and work patterns of female earners 25 years and over had been identical to those of men in 1995, their average earnings would have been over 13% higher than their actual

Table 4: Ratio of women's to men's average annual and hourly earnings, 1995

	All earners		Lawyers		Other graduates		All others	
	Annual	Hourly	Annual	Hourly	Annual	Hourly	Annual	Hourly
	%							
All ages	63.2	82.8	61.8	73.3	64.3	82.8	63.1	83.1
25 to 29	76.6	97.6	90.7	94.7	85.0	99.9	72.1	94.9
30 to 34	68.6	95.0	83.0	103.0	73.3	100.3	65.6	91.5
35 to 39	63.4	86.1	75.0	95.0	65.4	91.2	62.4	84.4
40 to 44	62.0	80.5	69.2	83.8	64.1	83.9	62.1	80.3
45 to 49	60.6	77.4	70.4	81.1	66.1	81.5	60.7	77.7
50 to 54	56.9	73.9	50.9	58.7	61.9	77.3	58.3	75.7
55 to 59	56.3	74.6	61.9	61.7	59.6	74.9	58.7	77.9
60 to 64	56.1	77.2	42.8	52.8	54.8	76.4	59.7	81.5
65 and over	55.5	82.1	90.3	105.0	49.3	67.5	63.0	94.0

Source: Census of Canada, 1996

Table 5: Distribution of earners by earnings and class of worker, 1995

	All earners			Lawyers			Other university graduates		
	Total	Em- ployees	Self- employed	Total	Em- ployees	Self- employed	Total	Em- ployees	Self- employed
	%			%			%		
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than \$10,000	19.1	17.2	29.5	6.5	5.7	7.2	13.0	11.5	22.0
\$10,000 to 19,999	18.0	17.5	21.1	8.1	7.9	8.2	11.4	10.8	14.9
\$20,000 to 29,999	19.0	19.5	16.2	8.9	8.8	9.0	12.4	12.4	12.1
\$30,000 to 39,999	16.4	17.3	11.0	9.2	9.7	8.8	14.0	14.7	10.0
\$40,000 to 49,999	11.0	11.7	6.3	9.6	11.5	7.9	14.1	15.2	7.4
\$50,000 to 59,999	7.2	7.8	4.1	8.6	11.1	6.5	12.7	13.8	6.0
\$60,000 to 69,999	4.0	4.2	2.8	9.1	11.3	7.2	8.7	9.3	4.9
\$70,000 to 79,999	1.9	1.9	1.9	7.7	10.5	5.3	4.3	4.4	3.8
\$80,000 to 99,999	1.6	1.5	2.1	9.7	11.4	8.3	4.0	3.9	4.9
\$100,000 to 119,999	0.7	0.6	1.4	6.7	5.5	7.8	1.9	1.6	3.7
\$120,000 to 149,999	0.4	0.3	1.1	4.7	2.8	6.2	1.3	1.0	3.2
\$150,000 to 249,999	0.5	0.3	1.7	7.5	2.7	11.6	1.6	1.0	5.1
\$250,000 or more	0.1	0.1	0.6	3.6	1.0	5.8	0.6	0.6	1.8
Average earnings (\$)	30,600	30,700	30,000	75,200	61,500	86,800	44,000	43,200	49,600
Median earnings (\$)	26,800	27,800	19,700	58,900	55,700	63,200	39,400	40,400	30,900
Gini coefficient	0.4158	0.3879	0.5661	0.4540	0.3708	0.4871	0.4080	0.3729	0.5688

Source: Census of Canada, 1996

earnings and those of men.⁸ In the case of lawyers, annual hours accounted for about 30% of the difference.

Distribution of earnings

About 37% of all persons 25 and over who worked in 1995 reported total earnings of less than \$20,000 (Table 5). Only one in 10 earned \$60,000 or more. Workers with a university degree other than in law were less concentrated at the lower end of the earnings scale. One-quarter (24%) of them had earnings of less than \$20,000 in 1995, and 2 in 10 earned at least \$60,000. Only 5% reported earnings of \$100,000 or more.

In contrast, less than 15% of lawyers reported earnings under \$20,000. Nearly half (49%) earned at least \$60,000. About 23% of all lawyers earned at least \$100,000 in 1995, with close to 4% reporting earnings of \$250,000 or more.

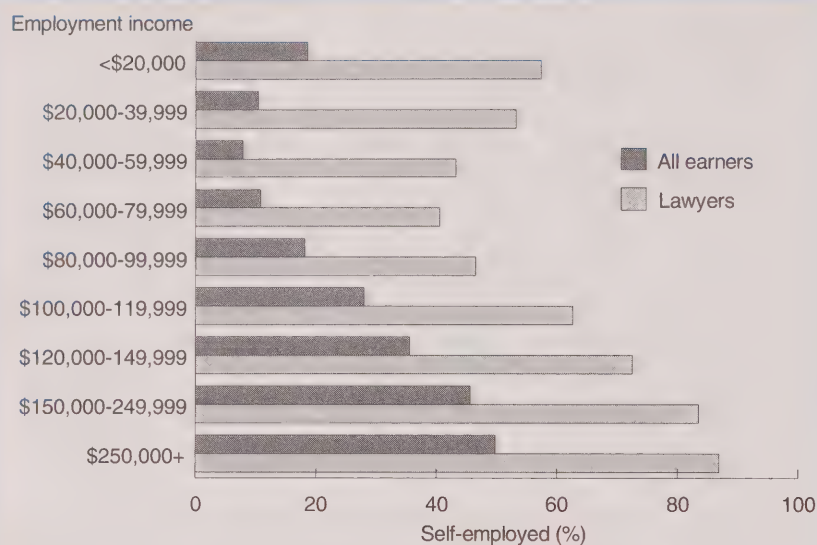
Overall, average earnings of the self-employed (\$30,000) were 2% lower than those of employees (\$30,700). In contrast, average earnings of self-employed lawyers (\$86,800) were 41% greater than

those of their employee counterparts (\$61,500). The situation of earners with a degree other than in law was similar though less pronounced. In their case, average earnings of the self-employed (\$49,600) were about 15% higher than those of employees (\$43,200).

On the whole, average earnings of self-employed men were 7% less than those of male employees; self-employed women earned 16% less than female employees. In the case of lawyers, earnings of the self-employed were significantly higher for both men (33%) and women (18%).

The proportion of the self-employed was above average in the two lowest earnings groups.⁹ It declined as earnings reached \$60,000, and then began to increase sharply (Chart C). Nearly one-half of all workers earning \$150,000 or more were self-employed. The pattern was similar among lawyers except that the proportions of the self-employed were much higher at all earnings levels. Over half of lawyers earning less than \$40,000 in 1995 were self-employed, while four of every five earning \$150,000 or more worked for themselves.

Chart C: Regardless of earnings level, lawyers were more likely than most other earners to be self-employed.



Source: Census of Canada, 1996

The effect of these differences is reflected in the earnings distributions of the two groups (Table 5). Relatively more self-employed were in both the lower and upper ends of the earnings distribution. On the one hand, compared with about one-third of employees, one-half of the self-employed had earnings of less than \$20,000 in 1995. On the other hand, the proportions of self-employed earners exceeded those of employees in earnings groups beginning at \$80,000. Compared with about 1% of all employees, nearly 5% of the self-employed earned \$100,000 or more.

In the case of lawyers, self-employment generated substantially higher earnings than paid work. Compared with 12% of lawyers working as employees, 31% of self-employed lawyers earned at least \$100,000 in 1995. Furthermore, while only 1% of lawyers working

as employees earned at least \$250,000, some 6% of those self-employed did so. The position of earners with a degree other than in law was similar: the self-employed had higher concentrations at both the upper and lower ends of the distribution.

Consequently, while average earnings of the self-employed were 2% lower than those of employees, median earnings were 29% lower (\$19,700 versus \$27,800). In contrast, compared with a difference of 41% in average earnings, the median earnings of self-employed lawyers (\$63,200) were 13% greater than those of employees (\$55,700). Self-employed workers with a university degree other than in law had average earnings 15% higher than those of their employee counterparts, but median earnings 23% lower (\$30,900 versus \$40,400).

These data clearly indicate a greater inequality of earnings among the self-employed. A convenient measure to estimate the degree of inequality is the Gini coefficient. The value of this coefficient lies between zero and one, denoting, respectively, total equality (all earners receive an equal amount) and total inequality (one earner receives the entire amount).

The Gini coefficient for overall earnings in 1995 was 0.4158. The coefficient for the self-employed (0.5661) exceeded that for employees (0.3879) by nearly 18 percentage points. While the Gini was higher among lawyers (0.4540), the difference between the self-employed (0.4871) and employees (0.3708) was 12 percentage points. Self-employed earners with a degree other than in law exhibited the highest earnings inequality with a coefficient of 0.5688, about 20 points higher than their employee counterparts.

Changes over time

Changes in overall economic activity, as well as in the characteristics of workers, affect income from employment.

Workforce composition, 1970 to 1995

One of the most important changes in recent decades is in the sex composition of the workforce (Rashid, 1993). As pointed out earlier, these changes are a function of both women's growing participation in the labour force and their increasing level of education. In 1970, women accounted for 32% of all earners 25 years and over (Table 6). By 1995, their proportion had increased to 46%.

Notes and definitions

Earnings (employment income) are the sum of wages and salaries and net self-employment income from the operation of a farm, business or professional practice owned and operated by the respondent. Self-employment income is reported after business expenses but, as with wages and salaries, before income tax.

All income figures are expressed in constant **1995 dollars**, meaning that actual figures for earlier years have been adjusted for changes in the Consumer Price Index.

The 1991 Standard Occupational Classification, used in the 1996 Census, classified **lawyers and Quebec notaries** as occupations concerned with advising clients on legal matters, pleading cases or conducting prosecutions in courts of law, representing clients before tribunals and administrative boards and drawing up legal documents. Articling law students are included and notaries public in provinces other than Quebec are excluded. The data from earlier censuses (1971 and 1981) are based, respectively, on the Occupational Classification Manual and the 1980 Standard Occupational Classification. The three classifications are consistent except for a minor difference: in 1980, notaries public in Quebec were excluded and those in British Columbia were included.

Employees work for others, while the **self-employed** work for themselves in an *unincorporated* farm, business or professional practice. Respondents who describe themselves as self-employed in an *incorporated* enterprise, though

technically employees of the corporation, are more like the self-employed in their economic behaviour. Furthermore, they tend to own most of the capital invested in the enterprise. Their income is, therefore, a mixture of returns to labour and capital. Accordingly, these persons are classified here with the unincorporated self-employed. Finally, a small group designated as unpaid workers in a business owned and operated by a family member is included in the totals but not discussed separately.

Census respondents reported the number of weeks worked in the preceding calendar year and weekly hours worked in their job at the time of the census. **Annual hours** are the product of these two variables.

Persons selected for this analysis were at least 25 at the time of the 1996 Census, had worked in 1995 and had also reported employment income for that year. Of the 15 million persons who worked and reported earnings in 1995, about 2.4 million or 17% were 15 to 24. Over 93% of these young earners were without a university degree. A negligible proportion of lawyers belonged to this age group. The 1995 earnings reported by these young lawyers were often low, perhaps because they were casual earnings. Although this small proportion would not affect the overall earnings of lawyers, the inclusion of young earners would depress overall average earnings. This would distort comparisons. Accordingly, this age group was excluded from the analysis.

Table 6: Number of earners by sex and education

		All earners	Lawyers	Other graduates	All others
		'000	'000	'000	'000
1970	Both sexes	6,870	16,130	495	6,360
	Men	4,682	15,370	381	4,285
	Women	2,189	760	113	2,074
1980	Both sexes	9,105	33,245	1,140	7,932
	Men	5,516	28,415	748	4,740
	Women	3,589	4,825	392	3,192
1995	Both sexes	12,148	57,680	2,285	9,805
	Men	6,588	40,175	1,237	5,311
	Women	5,560	17,505	1,048	4,494

Source: Census of Canada, 1971, 1981, 1996

The number of persons 25 years and over who worked and reported employment income increased by 33% between 1970 and 1980, and by another 33% between 1980 and 1995. Compared with these overall increases, the number of male earners increased by 18% and 19%, but that of female earners did so by 64% and 55%. Thus, over the 25 years, compared with an overall increase of 77%, the number of male earners increased by 41% and that of female earners by 154%.

The changes among lawyers were much greater. The total number of lawyers increased by 106% between 1970 and 1980 and by another 73% between 1980 and 1995. Comparable changes in the number of men in the profession were 85% and 41%. Increases in the number of female lawyers were especially noteworthy: 535% between 1970 and 1980 and 263% between 1980 and 1995. Thus, while women accounted for less than 5% of lawyers in 1970, their proportion increased to 15% in 1980 and to 30% in 1995.

Similar changes took place among earners with a degree other than in law. The proportion of women doubled from 23% in 1970 to 46% in 1995.

The age profile of earners also changed during the period under review. Between 1970 and 1980, the number of both male and female earners under age 40 grew at an above-average rate. By 1995, the workforce had matured, with

above-average increases in the 35-to-54 year groups. In the legal profession, the pattern of change was similar, but the large growth in the number of lawyers resulted in major concentrations in the younger groups, especially in the case of women. For example, the proportion of lawyers under 35 increased significantly between 1970 and 1980—from 36% to 46% for men, and from 47% to

71% for women. By 1995, the proportion of men under 35 had dropped to 22%, compared with women's 45%. In fact, women were the majority (54%) in the youngest group (25 to 29). This is not surprising, given that the overall number of female lawyers had increased 23 times over the 25 years, compared with 2.6 times for men.

Table 7: Lawyers and other earners by selected characteristics, 1980

	All earners			Lawyers			Other university graduates			All others		
	Both sexes	Men	Women	Both sexes	Men	Women	Both sexes	Men	Women	Both sexes	Men	Women
	'000						'000			'000		
Total	9,105	5,516	3,589	33,245	28,415	4,825	1,140	748	392	7,932	4,740	3,192
Age												
25 to 29	1,791	1,012	780	7,180	5,245	1,940	276	153	123	1,509	854	655
30 to 34	1,626	963	663	9,245	7,775	1,470	281	177	104	1,335	778	557
35 to 39	1,300	776	524	5,900	5,280	620	196	135	61	1,099	636	463
40 to 44	1,060	630	430	3,010	2,755	255	122	87	35	935	541	394
45 to 49	962	588	374	2,475	2,250	225	85	61	24	874	525	349
50 to 54	883	555	328	2,130	1,995	130	69	50	20	812	504	308
55 to 59	741	477	264	1,420	1,345	75	56	42	13	684	433	250
60 to 64	481	325	156	870	795	70	32	25	8	448	300	148
65 and over	260	189	71	1,015	975	35	22	18	4	237	170	67
	years			years			years			years		
Median age	39.3	40.1	38.3	35.2	36.0	31.1	35.3	36.5	33.3	40.1	40.9	39.1
Class of worker	'000						'000			'000		
Employee	8,068	4,682	3,386	14,260	10,785	3,470	1,021	650	371	7,033	4,022	3,012
Self-employed	1,023	830	193	18,985	17,625	1,355	118	98	20	886	715	171
Weeks worked												
1 to 13	529	184	345	445	255	190	43	16	26	486	168	319
14 to 26	786	371	415	1,610	1,075	540	78	35	43	706	335	371
27 to 39	686	369	317	1,680	1,160	520	78	37	41	607	331	276
40 to 52	7,103	4,592	2,511	29,505	25,925	3,580	941	659	282	6,133	3,907	2,226
Work intensity												
Mostly full-time	7,756	5,204	2,553	32,025	27,575	4,450	1,019	712	307	6,706	4,464	2,241
Mostly part-time	1,348	312	1,036	1,215	845	375	121	36	85	1,226	276	951
Average annual hours	hours			hours			hours			hours		
	2,222	2,375	1,988	2,346	2,372	2,192	2,169	2,265	1,985	2,230	2,393	1,988

Source: Census of Canada, 1981

Note: For comparable 1995 figures, see Table 1.

Table 8: Average earnings of lawyers and other earners, by selected characteristics, 1980

	All earners			Lawyers			Other university graduates			All others		
	Both sexes	Men	Women	Both sexes	Men	Women	Both sexes	Men	Women	Both sexes	Men	Women
	1995 \$			1995 \$			1995 \$			1995 \$		
Total	31,800	39,400	20,200	71,100	76,800	37,300	48,700	57,200	32,400	29,300	36,400	18,700
Age												
25 to 29	26,400	31,500	19,900	32,100	33,800	27,600	31,000	34,500	26,700	25,500	30,900	18,600
30 to 34	31,700	39,100	20,800	60,400	64,200	40,400	43,300	50,000	31,800	29,000	36,400	18,700
35 to 39	34,700	44,000	20,900	83,300	87,900	44,400	53,900	62,300	35,000	31,000	39,700	19,000
40 to 44	35,000	44,700	20,600	104,600	110,000	47,200	60,500	69,700	37,900	31,400	40,400	19,100
45 to 49	35,200	44,400	20,600	108,600	114,100	52,300	65,600	75,900	39,500	32,000	40,500	19,200
50 to 54	34,700	43,200	20,300	105,600	108,400	64,100	67,300	77,800	40,800	31,700	39,600	19,000
55 to 59	33,000	40,400	19,600	93,000	95,800	42,500	67,600	76,100	40,200	30,000	36,700	18,500
60 to 64	30,300	35,700	19,100	83,900	88,300	36,600	60,600	67,700	37,500	28,000	32,900	18,100
65 and over	21,000	23,600	13,900	69,100	70,200	38,900	37,800	41,700	21,000	19,200	21,500	13,500
Class of worker												
Employee	31,400	39,400	20,300	51,700	57,400	33,800	46,600	54,600	32,600	29,100	36,900	18,800
Self-employed	35,700	39,600	19,100	85,700	88,700	46,400	67,000	74,500	30,100	30,500	33,600	17,600
Weeks worked												
1 to 13	6,400	10,200	4,300	14,200	18,200	8,900	7,800	10,700	6,000	6,200	10,200	4,200
14 to 26	13,900	18,700	9,500	18,000	20,900	12,300	17,100	20,300	14,500	13,500	18,500	8,900
27 to 39	21,200	26,800	14,700	22,600	25,000	17,200	27,500	31,900	23,500	20,400	26,300	13,400
40 to 52	36,800	43,200	24,900	77,600	82,100	45,500	54,900	61,700	38,900	33,800	39,900	23,100
Work intensity												
Mostly full-time	35,200	40,700	24,200	72,500	78,000	38,500	52,500	59,000	37,400	32,400	37,500	22,300
Mostly part-time	12,400	18,400	10,500	33,200	37,600	23,400	16,800	22,200	14,400	11,900	17,800	10,200
Average hourly earnings	14.33	16.59	10.18	30.30	32.39	17.01	22.44	25.25	16.34	13.12	15.19	9.41

Source: Census of Canada, 1981

Note: For comparable 1995 figures, see Table 2.

Work patterns, 1980 to 1995

Besides the demographic changes discussed above, significant changes also occurred in the work patterns of earners between 1980 and 1995 (Tables 7 and 1). The proportion of male earners working at least 40 weeks declined by 3 percentage points; that of women working that number of weeks increased by 6 points. Male lawyers showed an increase of 2 percentage points and other male university graduates, a decline of 2 points. In contrast, the proportion of female lawyers and other female university graduates working at least 40 weeks increased by 10 and

6 percentage points, respectively. Furthermore, regardless of the number of weeks worked, the overall proportion of men working mostly full time declined during the period, while that of women doing so increased. Although women in the legal profession and other female university graduates did not follow this overall trend, their work intensity was well above average in both 1980 and 1995.

Self-employment increased among all earners from 11% in 1980 to 14% in 1995. In the case of lawyers, the overall position

declined from 57% to 54%. However, this is due to the change in the sex distribution in the profession. While the proportion of self-employed male lawyers increased only marginally, the proportion of female self-employed lawyers increased by 8 percentage points, from 28% to 36%.

Earnings, 1980 to 1995

As a consequence of the recession of the early 1980s, workers 25 years and over lost 3.9% in earnings between 1980 and 1985 (after compensating for changes in the Consumer Price Index [see *Notes and definitions*]). They recovered

2.9% between 1985 and 1990, only to lose it again following the recession of the early 1990s. Thus, overall average earnings fell 4.0% between 1980 and 1995. Earnings of men and women moved in opposite directions (Statistics Canada, 1998). Over the 15 years, men lost 7% while women gained 15%.

Changes in the earnings of lawyers followed a significantly different pattern. Between 1980 and 1995, their overall average earnings increased by 6%—from \$71,100 to \$75,200 (Tables 8 and 2). Real average earnings of men in the profession increased by 11%, from \$76,800 to \$85,100, and those of women increased by 41%, from

\$37,300 to \$52,600. One of the reasons for this difference in rates of change in earnings is the difference in rates of growth of the two groups. As noted earlier, the increase in the number of male lawyers was less than that of female lawyers. The change in the number of men was closer to the overall increase in the population 25 years and over, indicating a more or less normal rate of entry and exit for men in the profession. In contrast, new female lawyers did not just replace those leaving, but were an addition to the profession. As they gained experience, their earnings increased. As a result, average earnings of female lawyers rose during the period under review.

However, because they earned less than their male counterparts (in part, because of fewer hours of work), their growing proportion (from 15% in 1980 to 30% in 1995) depressed the overall average earnings of lawyers, resulting in a smaller relative change than in the earnings of either men or women.

The increasing proportion of female earners exerted a downward pressure on overall average employment income, especially in the case of workers with higher levels of education (Table 9). Other things being equal, if the sex composition of workers had not changed between 1980 and 1995, overall average earnings would have been higher by 3%. For both lawyers and other university graduates, the effect would have been significantly greater (7% and 5%).

These changes were more than compensated by the effect of a maturing workforce. Other things being equal, if the age distribution had not changed between 1980 and 1995, overall average earnings would have been 3% lower. Again, the effect would have been much greater for lawyers (-15%) and other university graduates (-8%).

Changes in work patterns had a positive effect on women's earnings and a negative effect on men's. The net overall effect of such changes was relatively small except for university graduates in disciplines other than law (3%).

Taken together, changes in sex, age and work profiles between 1980 and 1995 had an overall positive effect on the earnings of lawyers. Without these changes, their average earnings in 1995 would have been over 10% lower. The net effect on other earners was small.

Table 9: Effect on earnings of changes in earners' characteristics, 1980 to 1995

		All earners	Lawyers	Other graduates	All others
		\$			
Actual 1995 earnings		30,600	75,200	44,000	27,200
Standardized by					
Sex	$\Sigma (PS_i \cdot YS_i)$	31,400	80,300	46,200	27,900
Age	$\Sigma (PA_i \cdot YA_i)$	29,600	64,100	40,700	26,500
Sex and age	$\Sigma (PSA_i \cdot YSA_i)$	30,500	66,900	42,700	27,200
Weeks worked	$\Sigma (PW_i \cdot YW_i)$	30,500	74,300	44,200	27,200
Worked full/part time	$\Sigma (PF_i \cdot YF_i)$	31,000	75,800	45,600	27,500
Weeks and time	$\Sigma (PWF_i \cdot YWF_i)$	30,800	74,700	45,400	27,400
Sex, age, weeks and time	$\Sigma (PSAWF_i \cdot YSAWF_i)$	30,900	67,500	44,000	27,600

Source: Census of Canada, 1981 and 1996

P = Proportion of earners in 1980 in category i

Y = Average earnings in 1995 in category j

S = Male and female earners

A = Earners in age category i

SA = Male and female earners in age category i

W = Earners in "weeks worked" category i

F = Full-and part-time earners

WF = Full-and part-time earners in "weeks worked" category i

$SAWF$ = Earners in category i of sex-age-weeks-full/part-time

Summary

Compared with 46% of all workers 25 years and over in 1995, women accounted for 30% of lawyers. Female lawyers were concentrated in the younger age groups. While the median ages of men and women overall differed by less than a year, those of male and female lawyers did so by over seven years.

In general, women worked fewer weeks than men, and a larger proportion worked part time. This pattern prevailed among lawyers, although both men and women in this profession worked more weeks and longer hours than other workers. Overall, men worked 1,805 hours and women, 1,377; lawyers worked 2,308 and 1,945, respectively. Compared with 14% of all earners, 54% of lawyers were self-employed.

At \$75,200, lawyers earned 146% more than the overall average of \$30,600 in 1995, and 71% more than workers with a university degree in a discipline other than law. Longer work hours accounted for about 25% of the difference between lawyers' and overall average earnings.

While 56% of all workers earned less than \$30,000 in 1995, less than 2% earned \$100,000 or more. Comparable proportions for lawyers were 24% and 23%, with 4% reporting earnings of at least \$250,000.

On the whole, self-employed workers earned 2% less than employees; in contrast, lawyers with their own practice earned 41% more than those working for others. While about one-third of employees earned less than \$20,000 in 1995, one-half of the self-employed did so. In addition, only 1% of employees, as opposed to nearly 5% of the self-employed, earned \$100,000 or more. In the case of lawyers, 12% of employees earned at least \$100,000 in 1995, compared with 31% of the self-employed.

Overall, average earnings of women amounted to 63% of men's; female lawyers earned 62% of their male counterparts' earnings. If women had had the same age and work patterns as men, the ratios would have been 72% and 73%, respectively. The ratio of average hourly earnings overall was 83%. In the case of lawyers, it was 73%. Little difference existed in average earnings per hour for those under age 35.

Over time, major changes have taken place in the composition of the workforce. The number of earners 25 years and over increased by 33% between 1970

and 1980, and by another 33% between 1980 and 1995. Over the 25 years, compared with an overall increase of 77%, the number of male earners increased 41% and that of women, 154%. Growth among lawyers was much greater. The total number of lawyers increased by 106% between 1970 and 1980 and another 73% between 1980 and 1995. Comparable increases for men were 85% and 41% and for women, 535% and 263%. While women accounted for less than 5% of lawyers in 1970, their proportion increased to 15% in 1980 and to 30% in 1995.

As a result of the recessions of the early eighties and nineties, real average earnings fell 4% between 1980 and 1995. Male earners lost 7% but female earners gained 15%. In the case of lawyers, men and women gained 11% and 41%, respectively. However, overall average earnings of lawyers showed an increase of 6%. This was because of the extraordinary growth in the number of young women in the profession. Their lower earnings restrained the increase in the overall average. At the same time, a maturing workforce had a positive effect on earnings, especially in the case of lawyers. On the whole, the positive effects of changes in earners' age profiles were neutralized by the negative effects of changes in their sex and work profiles. In the case of lawyers, however, if their sex composition and age and work profiles had not changed between 1980 and 1995, their average earnings would have been lower by about 10% in 1995.

Perspectives

■ Notes

- 1 This analysis is restricted to earnings and does not take into account other sources of income such as investment income or non-monetary fringe benefits. Furthermore, earnings are reported before income tax paid on personal income.
- 2 The census provides income data for individuals 15 years and over. With the exception of the introductory paragraph, the article excludes those under 25 years of age. (See *Notes and definitions*.)
- 3 Someone who worked 35 hours over 52 weeks would have worked 1,820 hours during the year.
- 4 See *Notes and definitions*.
- 5 Lawyers belong to a relatively homogeneous occupation, but other university graduates fall into a wide spectrum of occupations and display a greater dispersion in their earnings. (See Table 5 and the related discussion.)

6 This is estimated by using the following formula:

$$\text{coefficient of variation (CV)} = \sqrt{\sum P_i (Y_i - \bar{Y})^2} / \bar{Y}$$

where P_i is the proportion of earners in the i th age group in a category, Y_i equals their average earnings and \bar{Y} is the overall average earnings of the category. The CV of average earnings by age for lawyers (30.9%) and other university graduates (24.3%) was twice that for other earners (12.7%).

7 Most published statistics relating to female/male earnings ratios are restricted to those who work 49 to 52 weeks, mostly full time. However, this section covers all earners 25 years and over and the effect of differences in work activity is estimated separately.

8 The proportion, P , of earnings difference ascribed to difference in hours was calculated as follows:

$$P = Y_f \cdot \frac{\frac{H_m}{H_f} - 1}{Y_m - Y_f}$$

where Y_f and Y_m are the average earnings of women and men, and H_f and H_m their annual work hours.

9 The open-ended lowest earning group includes all persons who had negative earnings. Since only the self-employed can suffer losses in earnings, their proportions in the lower groups tend to be relatively high.

References

Rashid, A. "Earnings of physicians." *Perspectives on Labour and Income* (Statistics Canada, Catalogue no. 75-001-XPE) 11, no. 4 (Winter 1999): 27-38.

---. "Seven decades of wage changes." *Perspectives on Labour and Income* (Statistics Canada, Catalogue no. 75-001-XPE) 5, no. 2 (Summer 1993): 9-21.

Statistics Canada. *Canadian Income and Earnings for 1990 and 1995*. Dimension series, 1996 Census of Canada. CD-ROM Catalogue no. 94F0005XCB. Ottawa, 1999.

---. *The Daily*. Catalogue no. 11-001-XPE. Ottawa, May 12, 1998.

Back Issues: Did you miss something?

Don't worry! Back issues of **Perspectives on Labour and Income** are available. Feature articles in these issues include:

Winter 1999	"Copreneurs" • Truck drivers • Earnings ratios • Earnings of physicians • Exports, GDP and jobs • Cumulative index
Autumn 1999	Seniors volunteering • Return to work after childbirth • Baby boom women • Missing work • Self-employment • Unionization
Summer 1999	Earnings mobility • Retiring later • Retirement savings • Hours of work • Literacy and work
Spring 1999	Income deciles • Seasonality • Obtaining a job • Student loans • Protective services

For more information contact **Statistics Canada, Operations and Integration Division, Circulation Management**, 120 Parkdale Avenue, Ottawa, Ontario K1A 0T6. Or, call toll free 1 800 267-6677.

Perspectives on Labour and Income

The quarterly for labour market and income information

Update on gambling

Katherine Marshall

The gambling industry grew steadily throughout the 1990s. Both those in favour of and those opposed to this provincially controlled and regulated industry continue to express the need for further information on the subject. This note updates

national and provincial data for most charts and tables published in two previous *Perspectives* articles on gambling (Marshall, 1996 and 1998a). (See *Data sources and definitions*.)

Data sources and definitions

Family Expenditure Survey (FAMEX): collected, for various years since 1969, national information on expenditures, incomes and other characteristics of families and individuals living in private households. In 1997, this survey was replaced by the Survey of Household Spending.

Labour Force Survey (LFS): a monthly household survey that collects information on labour market activity from all persons 15 years and over, including detailed occupational and industrial classifications.

National Accounts: the quarterly Income and Expenditure Accounts (IEA) is one of several programs constituting the System of National Accounts. The IEA produces detailed annual and quarterly income and expenditure accounts for all sectors of the Canadian economy, namely households, businesses, governments and non-residents.

Survey of Household Spending (SHS): an annual survey that began in 1997 and replaced FAMEX and the Household Facilities and Equipment Survey. It collects data on expenditures, income, household facilities and equipment and other characteristics of families and individuals living in private households.

Gambling industries: This industry group covers establishments primarily engaged in operating gambling facilities, such as casinos, bingo halls and video gaming terminals; or providing gambling services, such as lotteries and off-track betting. It excludes

horse race tracks and hotels, bars and restaurants that have casinos or gambling machines on the premises.

Gambling profit: net income from provincial and territorial government-run lotteries, casinos and VLTs, after deducting prizes and winnings, operating expenses (including wages and salaries), payments to the federal government and other overhead costs.

Gambling revenue: consists of all money wagered on provincial and territorial government-run lotteries, casinos and VLTs, less prizes and winnings. Gambling revenue generated by and for charities, and on Indian reserves is excluded.

Government casino: a government-regulated commercial casino. Permits, licences and regulations for casinos, both charity and government, vary by province. Government casinos, now permitted in several provinces, also vary by the degree of public and private involvement in their operations and management. Some government casinos are run entirely as crown corporations, while others contract some operations—for example, maintenance, management and/or services—to the private sector.¹

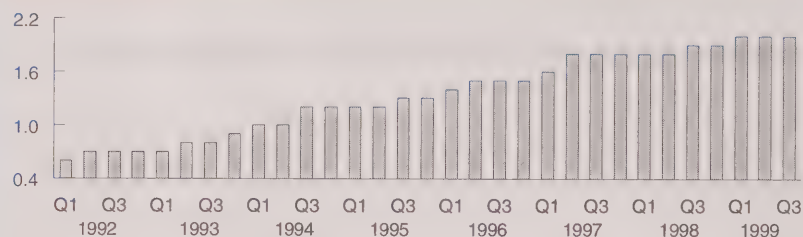
Video lottery terminal (VLT): a coin-operated, free-standing electronic game of chance. Winnings are paid out through receipts that are turned in for cash, as opposed to cash payments from slot machines. Such terminals are regulated by provincial lottery corporations.

Katherine Marshall is with the Labour and Household Surveys Analysis Division. She can be reached at (613) 951-6890 or marskat@statcan.ca.

Gambling's role in the economy continues to grow

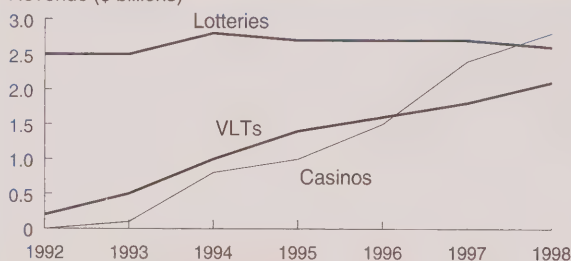
Revenues from non-charity gambling rose from \$2.7 billion in 1992 to \$7.4 billion in 1998, a 170% increase. Since 1995, quarterly revenue² from gambling has increased steadily; in the third quarter of 1999, it surpassed \$2 billion for the first time.

Revenue (\$ billions)



Source: National Accounts

Revenue (\$ billions)



Source: National Accounts

Revenues from government lotteries peaked at \$2.8 billion in 1994, and then declined slightly over the next four years. Although lottery revenue represented 90% of all gambling returns in 1992, the proportion dropped to 35% in 1998 as a result of steep increases from VLTs and casinos in the late 1990s. Casinos have become the largest generator of gambling revenue, having exceeded VLTs in 1997 and lotteries in 1998.

Overall, the gambling industry is a relatively small facet of the Canadian economy, but its rate of growth is noteworthy. While employment and GDP³ in the gambling industry made up just 0.1% in 1992, employment increased to 0.3% by 1999, and GDP to 0.2% by 1998. Furthermore, the increase in the former (27,400) between 1992 and 1999 accounted for 1.5% of the total increase in employment, and the increase in the latter (\$900 million) between 1992 and 1998 represented 0.8% of the total increase in GDP.

	All industries	Gambling	Non-gambling
Employment			
1992	12,842,000	11,900	12,830,100
% distribution	100	0.1	99.9
1999	14,710,800	39,200	14,671,600
% distribution	100	0.3	99.7
Increase	1,868,800	27,400	1,841,500
% of total	100	1.5	98.5
GDP* (\$ millions)			
1992	604,300	400	603,900
% distribution	100	0.1	99.9
1998	721,000	1,300	719,700
% distribution	100	0.2	99.8
Increase	116,700	900	115,800
% of total	100	0.8	99.2

Sources: Labour Force Survey; National Accounts

* The price, at factor cost, of the goods and services produced.

Alberta and Saskatchewan had the largest percentage of revenue and profit gain

Total money wagered on non-charity lotteries, casinos and VLTs increased in all regions of Canada. Saskatchewan showed the largest proportional increase, from \$62 million in 1992 to \$289 million in 1998, and British Columbia the smallest, from \$403 million to \$430 million. Alberta had the second highest proportional increase in gambling revenue, and the highest proportional increase in profit (from \$125 million to \$751 million). Average adult expenditure

on gambling also rose in every province and territory (except British Columbia), reaching well over \$250 per capita in most provinces by 1998, with a high of \$445 in Manitoba. British Columbia and the Territories had relatively low expenditures of \$140 and \$90, respectively, largely because these jurisdictions did not permit government casinos or VLTs in 1998.

	Gambling revenue*			Gambling profit**			Annual gambling expenditure per capita†	
	1992	1998	Increase	1992	1998	Increase	1992	1998
	\$ millions (current)		%	\$ millions (current)		%	\$ (current)	
Canada	2,734	7,406	171	1,680	4,490	167	130	320
Newfoundland	80	141	76	42	88	110	190	335
Prince Edward Island	20	28	45	7	15	114	205	280
Nova Scotia	125	275	120	72	136	89	180	380
New Brunswick	117	179	54	49	86	76	210	310
Quebec	693	2,019	191	472	1,145	143	130	355
Ontario	853	2,849	234	529	1,431	171	105	330
Manitoba	153	378	148	105	240	129	185	445
Saskatchewan	62	289	366	39	200	413	85	385
Alberta	225	813	261	125	751	501	120	380
British Columbia	403	430	7	239	395	65	155	140
Yukon and Northwest Territories	5	6	20	1	3	200	80	90

Sources: National Accounts, Public Institutions (Financial management statistics) and post-censal population estimates

* Total money wagered on non-charity lotteries, casinos and VLTs, minus prizes and winnings.

** Net income of provincial and territorial governments from total gambling revenue, less operating and other expenses (see Data sources and definitions).

† Persons 18 and over, as this is the legal age for gambling in most provinces.

Number of men, full-time work and earnings increased in gambling

Some of the characteristics of workers and jobs in the gambling industry have changed since 1992. Although the proportion of men employed in the industry in 1999 was still below the average in other industries—44%, compared with 54%—it had increased from 35% in 1992. The percentage of younger workers (under age 35) had increased slightly, from 57% to 60%, compared with a drop to 39% in non-gambling industries. Full-time employment jumped from 59% to 82%—a rate matching that of other industries. In 1992, most gambling-related jobs were found in Western Canada (55%), but by 1999 the bulk of gambling employment had shifted to Quebec (19%) and Ontario (48%).

Between 1997 and 1999, unionization increased among employees⁴ in the gambling industry, from 30% to 33%, while it dropped from 34% to 32% among other workers. Full-time hourly earnings in the industry rose considerably, from \$13.58 to \$16.19 for men (up 19%) and from \$13.06 to \$14.66 for women (up 12%). Even so, while workers in non-gambling industries saw only a 4% increase in hourly earnings, they still earned more than those in gambling: \$18.58 for men and \$15.32 for women.

	Gambling		Non-gambling	
Worker characteristics	1992	1999	1992	1999
Total employed	11,900	39,200	12,830,100	14,671,600
Sex			%	
Men	35	44	55	54
Women	65	56	45	46
Age				
15 to 34	57	60	45	39
35 years and over	43	40	55	61
Education				
High school graduation or less*	66	56	57	48
Postsecondary certificate or diploma	21	33	27	33
University degree	13	12	16	19
Work status				
Full-time	59	82	82	82
Part-time	41	18	18	18
Province				
Atlantic provinces	8	5	7	7
Quebec	9	19	24	23
Ontario	28	48	39	39
Prairie provinces	30	19	17	18
British Columbia	25	10	13	13
Class of worker				
Employee	98	97	85	82
Self-employed	--	--	15	17
Job characteristics	1997	1999	1997	1999
Employees	33,800	38,200	11,418,900	12,101,100
Union status			%	
Unionized**	30	33	34	32
Non-unionized	70	67	66	68
Job status				
Permanent	91	93	89	88
Temporary, term or casual	9	7	11	12
Usually receive tips				
Yes	27	27	7	7
No	73	73	93	93
Paid by the hour				
Yes	80	77	61	61
No	20	23	39	39
Average hourly earnings[†]			\$	
Men: full-time	13.58	16.19	17.83	18.58
Women: full-time	13.06	14.66	14.77	15.32

Source: Labour Force Survey

* May include some postsecondary education that was not completed.

** Includes both union members and persons who are not union members, but whose jobs are covered by collective agreements.

† Includes tips and commissions.

Three-quarters of households reported gambling in 1998

The percentage of households in Canada that spent some money on at least one gambling activity dropped from 82% in 1996 to 77% in 1998. This reflects the decreased participation in government lotteries (down from 74% to 68%), non-government lotteries, raffles and other games of chance (down from 39% to 34%) and bingos (down from 12% to 10%). Only participation in casino, slot machine and VLT⁵ activity increased (17% to 20%). In spite of the drop in reporting rates,

average expenditure by participating households increased from \$425 to \$460⁶ on all types of gambling.

Although two-thirds of both men and women living alone reported gambling in 1998, men spent on average twice as much as women (\$550, compared with \$275). Men's and women's participation rates were similar for all types of gambling except bingo: 12% of women living alone played bingo in 1998, compared with only 3% of men.

Provincial household reporting rates for at least one gambling activity ranged from 73% in New Brunswick to 82% in Quebec, with some variation by type of gambling activity. Household spending varied as well. Manitoba had the highest household expenditure for all gambling activities (\$590), while Quebec, despite the highest participation rate, had the lowest household expenditure (\$360).⁷

	Household expenditures on gambling activities									
	At least one gambling activity		Government lotteries		Other lotteries/raffles etc.		Casinos, slot machines and VLTs*		Bingos	
	\$	%	\$	%	\$	%	\$	%	\$	%
All households										
1996	425	82	240	74	70	39	360	17	675	12
1998	460	77	250	68	80	34	430	20	700	10
One-person households**										
Men	550	67	330	58	100	22	790	17	730	3
18 to 44	295	66	185	56	60	26	385	18	--	--
45 to 64	910	74	545	67	105	22	1,445	18	--	--
65 and over	535	60	270	52	245	16	665	13	--	--
Women	275	66	140	54	55	25	200	16	530	12
18 to 44	175	69	105	57	60	28	155	23	130	6
45 to 64	275	75	130	66	65	29	225	20	515	11
65 and over	330	61	160	47	45	21	220	11	610	15
All households										
Newfoundland	490	75	260	60	85	46	285	12	630	21
Prince Edward Island	445	76	220	59	90	49	335	11	870	15
Nova Scotia	480	78	220	66	75	50	330	25	750	15
New Brunswick	440	73	190	64	45	38	435	10	820	17
Quebec	360	82	245	78	55	21	240	19	480	10
Ontario	520	75	280	65	95	34	455	23	805	10
Manitoba	590	75	205	58	60	50	630	28	835	14
Saskatchewan	550	79	200	62	100	55	590	31	620	12
Alberta	520	74	190	63	110	40	685	21	750	11
British Columbia	405	74	265	65	70	36	455	13	720	6

Sources: Family Expenditure Survey, 1996; Survey of Household Spending, 1998

Note: Expenditures are per spending household. Unless otherwise indicated, figures are for 1998.

* VLTs were included starting in 1998.

** Using one-person households allows examination of individual characteristics. Persons 18 and over were selected as this is the legal age for gambling in most provinces.

Gambling increases with income

Participation in gambling increases with household income, a trend that holds for most types of gambling. For example, while 11% of households with an average after-tax income of less than \$20,000 in 1998 spent money on casinos, slot machines and VLTs, 29% of households with incomes of \$80,000 or more did so. Expenditure also increased until the \$80,000 or more level, when it dropped. However, even though higher income households generally spent more on

gambling, their expenditures represented a smaller proportion of their total income. For example, among gambling households, those with incomes of less than \$20,000 spent \$315 on gambling—2.3% of total after-tax household income—while those with \$80,000 or more spent \$590, or 0.6% of total after-tax income.

	After-tax income					
	Total	<\$20,000	\$20,000- 39,999	\$40,000- 59,999	\$60,000- 79,999	\$80,000+
	'000					
Total households	11,290	2,460	3,860	2,740	1,310	920
	%					
% reporting expenditure on at least one gambling activity	77	63	79	81	84	84
Government lotteries	68	53	70	72	76	72
Non-government lotteries, raffles, other	34	18	31	41	45	51
Casinos, slot machines, VLTs	20	11	19	24	27	29
Bingos	10	12	10	10	10	8
	\$					
Average expenditure per household	355	200	320	385	600	495
Average expenditure per spending household	460	315	405	470	715	590
	%					
Gambling as % of total income (all households)	0.7	1.5	1.1	0.8	0.9	0.5
Gambling as % of total income (spending households)	0.8	2.3	1.4	1.0	1.0	0.6
<i>Source: Survey of Household Spending, 1998</i>						

Perspectives

■ Notes

- 1 For more information on the ownership and operation of casinos, see Eadington (1994).
- 2 Refers to total money wagered on non-charity lotteries, casinos and VLTs, minus prizes and winnings.
- 3 The GDP figures for the gambling industry refer strictly to wagering activities, such as lottery ticket sales, VLT receipt sales and bets at casinos. Other economic spinoffs, such as hotel and restaurant business, security services, or building and equipment maintenance, are not included.
- 4 More detailed questions on employees were introduced with the 1997 revision of the Labour Force Survey.
- 5 VLTs were included in the casino and slot machine question starting in 1998. Although not on the questionnaire in 1996, VLTs were included in the above category when respondents volunteered the information.
- 6 The expenditure figures in this section are not adjusted for any winnings. As well, households consistently under-report the amount of money they spend on gambling. Comparisons with Lottery Corporation figures, for example, have shown that households under-report their government lottery purchases by more than 50%.
- 7 Survey of Household Spending (SHS) and National Accounts rankings of provincial expenditures differ, mainly because the SHS includes both charity and non-charity gambling activity.

■ References

- Eadington, W.R. "Casinos in Canada: Policy challenges in the 1990s." In *Gambling in Canada: The Bottom Line*, edited by C.S. Campbell, 3-17. Burnaby, B.C.: Criminology Research Centre, Simon Fraser University, 1994.
- Marshall, K. "The gambling industry: Raising the stakes." *Perspectives on Labour and Income* (Statistics Canada, Catalogue no. 75-001-XPE) 10, no. 4 (Winter 1998a): 7-11.
- . "Games of chance." *Family Expenditure in Canada, 1996* (Statistics Canada, Catalogue no. 62-555-XPB) (July 1998b): 32-39.
- . "A sure bet industry." *Perspectives on Labour and Income* (Statistics Canada, Catalogue no. 75-001-XPE) 8, no. 3 (Autumn 1996): 37-41.

Are you moving?

Please forward your name, old address, new address, telephone number and client reference number to: **Statistics Canada, Operations and Integration Division, Circulation Management, 120 Parkdale Avenue, Ottawa, Ontario K1A 0T6**; or call (613) 951-7277 or 1 800 700-1033 toll free, or fax (613) 951-1584.

Please allow four weeks notice to ensure uninterrupted delivery.

Youth volunteering on the rise

Frank Jones

In contrast to other age groups, more Canadians aged 15 to 24 are becoming volunteers. The volunteer participation rate of most of the population changed little between 1987 and 1997, but that of young people almost doubled, growing from 18% to 33%. Their share of the volunteer pool also grew—from 13% to 18%. For many young people, volunteer experience is an important link to the job market. As a form of civic education, volunteering is valuable not only to those involved, but also to the future workforce and to social cohesion (Sundeen and Raskoff, 1995).¹

Why has the youth volunteer rate risen? Using the National Survey of Volunteer Activity (a supplement to the October 1987 Labour Force Survey [LFS]) and the National Survey of Giving, Volunteering and Participating (a supplement to the November 1997 LFS), this article examines some sources of the growth. It also looks at the types of volunteer organizations most able to attract young people, and some factors that may have encouraged volunteering, including changes in the labour market.

School enrolment and volunteering

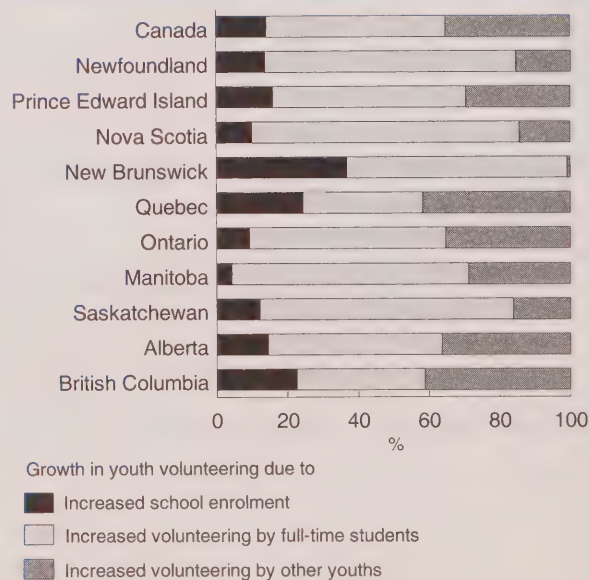
Full-time school enrolment has risen notably in the last few years—from 48% in 1989 to 58% in 1997 (Sunter and Bowlby, 1998). This rise has implications for youth volunteering, because full-time students are much more likely than either part-time students or non-student youths to volunteer. In 1997, the youth volunteer rate was 39% for full-time students, 25% for part-time students and 24% for non-students. Full-time students may have been more likely than the others to view volunteering as “a way of acquiring and asserting competence” (Serow, Ciechalski and Daye, 1990). Also, schools may have directly or indirectly encouraged this activity. Whatever the reason, increasing full-time enrolment boosted the youth volunteer rate between 1987 and 1997.

Frank Jones is with the Labour and Household Surveys Analysis Division. He can be reached at (613) 951-1931 or jonefra@statcan.ca.

Not all of the surge in volunteering can be attributed to the rise in full-time school enrolment, however. This factor accounted for only 14% (see Appendix). It was much more important in New Brunswick (37%), Quebec (24%) and British Columbia (22%) than in Nova Scotia (10%), Ontario (9%) or Manitoba (4%) (Chart).

The remaining 86% of the rise can be attributed to a growing inclination of both full-time students and other youths to volunteer. Full-time students' increasing volunteerism (which grew from 23% to 39%) accounted for just over half of the total rise in the youth volunteer rate. It was the most important

Chart: The rising youth volunteer rate is due to three factors.



Sources: National Survey of Volunteer Activity, 1987; National Survey of Giving, Volunteering and Participating, 1997

factor in all provinces except Quebec and British Columbia, and was extremely important in Newfoundland (71%), Nova Scotia (76%) and Saskatchewan (72%).

The rise in the tendency of other youths to volunteer accounted for the remaining 35% of the increase. This factor was most important in Quebec (42%) and British Columbia (41%).

Factors underlying the rise in youth volunteering varied considerably by province. This may reflect in part the differences in provincial education systems, especially their encouragement of community service by students.²

What youth volunteer rates grew?

Among 15-to-24 year-olds the volunteer participation rate increased by 15 percentage points between 1987 and 1997 (Table 1). Increases ranged from 8 points in New Brunswick and British Columbia, to about 20 points in Ontario and Saskatchewan.

Few youth subpopulations showed unusually high increases in volunteer rates. Married youths, part-time students, and "very religious" youths recorded lower-than-average increases (by at least 9 points).

The volunteer rate of "teens" grew by 17 percentage points, to reach 37%, while that of "mature youths" increased by 13 points, to 29%. This difference in growth reflects in part the higher full-time school enrolment rate of teenagers.

The increases for both groups of young people ranged from slight to very large, for some subpopulations. Growth in the teen rate was very marked in Ontario and

	Rates			Change since 1987		
	All youths	Age 15-19	Age 20-24	All youths	Age 15-19	Age 20-24
	%			% points		
Total	32.9	37.0	28.8	15.1	16.5	13.3
Province						
Newfoundland	34.6	38.1	--	17.4	19.8	--
Prince Edward Island	39.0	--	--	--	--	--
Nova Scotia	42.8	46.5	39.1	17.9	19.4	16.5
New Brunswick	32.8	43.2	22.8	7.6	13.7	1.7
Quebec	25.7	25.8	25.6	11.6	9.3	13.3
Ontario	34.7	39.1	30.4	20.5	23.2	17.6
Manitoba	43.9	53.7	34.2	17.7	19.9	14.6
Saskatchewan	42.7	50.9	33.8	19.7	27.1	11.4
Alberta	38.1	42.9	33.2	10.2	10.6	9.1
British Columbia	28.2	35.3	21.4	8.3	11.9	4.6
Area of residence						
Urban	32.5	35.8	29.4	15.3	16.0	14.3
Rural	34.6	41.8	24.8	14.4	19.1	7.4
Sex						
Women	34.9	40.3	29.6	15.4	17.5	12.8
Men	30.9	33.8	27.9	14.8	15.6	13.7
Marital status						
Married or common-law	20.1	--	19.6	3.8	--	2.6
Single or other	34.5	37.0	31.2	16.4	16.2	16.5
Labour force status						
Not employed	31.7	36.1	24.1	13.5	16.6	8.0
Employed	34.0	38.4	31.5	16.6	17.0	16.3
Type of school attended						
Primary or secondary	36.8	36.9	--	15.0	14.9	--
Community college/CEGEP	39.2	37.3	41.0	18.8	14.8	23.2
University	42.2	62.1	39.1	12.8	27.7	11.5
Student status						
Full-time	38.6	38.7	38.6	15.2	15.4	14.5
Part-time	25.3	--	33.0	6.1	--	11.8
Non-student	24.4	32.4	22.5	11.6	21.3	9.3
Perceived health status						
Fair or poor	28.4	38.0	19.8	11.7	16.5	7.0
Good or excellent	33.2	36.9	29.5	15.3	16.6	13.6
Perceived religiosity						
Not "very religious"	31.7	35.9	27.6	14.1	15.1	12.7
Very religious	47.7	53.3	42.3	2.4	9.1	-3.8

Sources: National Survey of Volunteer Activity; National Survey of Giving, Volunteering and Participating

Saskatchewan, and among university students and non-students. For mature youths, increases were also notable among residents of Ontario, and among youths attending a community college or a

CEGEP. Increases were relatively small for both teens and mature youths (8 percentage points or less) in New Brunswick and British Columbia, and among the "very religious."

Which organizations attract young volunteers?

A third perspective on the growth in youth volunteering is provided by a comparison of the organizations chosen by youths in 1987 and 1997. Multipurpose and service club organizations saw large gains in their share of youth volunteer jobs,³ as did social service, care and support organizations (Table 2). The heaviest losses were in education and youth development organizations, followed by leisure, recreation and sport groups, and religious organizations.

Of the volunteer jobs held by youths in 1997 most were in multipurpose organizations and service clubs (22%), which gained 16 percentage points since 1987. The growth was much higher for full-time students (18 points) than for other youths (8 points). These organizations include multipurpose women's groups, native and ethnic organizations, and bodies such as the Red Cross, Salvation Army and YM/YWCA.

The gain in the share of youth volunteer jobs was much more modest in social services, care and support organizations (5 points). In 1987, these groups had the second lowest share of youth jobs; in 1997, they stood fourth lowest, with 10% of youth volunteer jobs.

Education and youth development organizations experienced the greatest drop in youth volunteer jobs (15 percentage points), mainly because of a 22-point drop in the share of full-time student volunteers. Girl Guides, school sport and artistic programs, literacy and language programs, and student organizations fall into this category, which attracted the highest percent-

Table 2: Youth and older volunteers by organization, 1997

	All ages	Age 25+	Age 15-24		
			Total	Full- time students	Other youths
	%				
Total	100.0	100.0	100.0	100.0	100.0
Multipurpose; service clubs	15.0	13.7	21.6	24.6	13.8
Leisure, recreation and sport	15.6	16.0	13.4	12.0	17.1
Health	13.7	14.2	11.5	11.6	11.3
Education and youth development	9.1	8.6	11.4	12.2	9.1
Religion	14.2	14.9	10.8	11.5	9.2
Social services, care and support	9.2	8.9	10.2	9.1	13.3
Environment; justice; foreign; other*	7.1	6.9	8.1	7.3	10.3
Economic interests; arts and culture**	9.0	9.4	7.3	6.4	9.7
Society, or public benefit	7.1	7.4	5.6	5.4	6.1
Change in percentage points, 1987-1997					
Multipurpose; service clubs	5.9	4.2	15.7	18.4	8.4
Leisure, recreation and sport	-1.1	-0.3	-6.1	-4.2	-7.1
Health	3.2	3.3	2.8	3.5	1.7
Education and youth development	-5.7	-4.6	-14.5	-22.4	-4.3
Religion	-3.6	-3.3	-4.7	-4.3	-6.0
Social services, care and support	-0.2	-0.9	4.5	3.9	6.6
Environment; justice; foreign; other*	2.9	2.9	2.9	2.4	4.5
Economic interests; arts and culture**	-0.7	-0.7	0.1	1.1	-0.3
Society, or public benefit	-0.8	-0.7	-0.8	1.4	-3.7

Sources: National Survey of Volunteer Activity; National Survey of Giving, Volunteering and Participating

* Environment and wildlife; law and justice; international and foreign; and all other organizations.

** Employment and economic interests; arts, culture and humanities organizations.

age of youth volunteers in 1987 (26%), and the fourth highest in 1997 (11%).

Leisure, recreation and sport organizations also recorded a loss in share, from 20% of youth volunteers in 1987 to 13% in 1997. This was mainly because of a 7-point drop in the share of part-time or non-student volunteers. That of full-time students fell by 4 points. Despite the loss, this sector retained its second-place ranking in 1997. Religious organizations lost share because of part-time or non-student youths (6 points) and full-time students (4 points). Health organizations gained 3 points, and

the environment/justice/foreign/other group (combined because of low sample sizes), 3 points. Youth volunteering in employment/culture/humanities organizations changed little over the decade.

How did the labour market affect volunteering?

Is it possible that a worsening labour market (relative to that for other workers) prompted some young people to turn to volunteer work for experience or job contacts? Their labour market situation did indeed deteriorate between 1987 and 1997, at least in one

Table 3: Reasons for volunteering

Reason		Cited reason	Additional reasons						
			Belief	Skills	Strengths	Jobs	Affected	Friends	Religion
			%						
Belief in cause	Full-time students	91	...	83	70	60	58	34	21
	Other youths	94	...	82	65	42	70	29	23
Use skills and experience	Full-time students	83	91	...	78	67	58	34	21
	Other youths	82	94	...	74	50	72	31	23
Explore own strengths	Full-time students	70	92	93	...	70	58	35	21
	Other youths	64	96	96	...	53	70	30	26
Improve job opportunities	Full-time students	59	92	93	82	...	55	38	18
	Other youths	43	92	95	78	...	73	29	23
Personally affected by cause	Full-time students	55	97	88	74	59	...	37	28
	Other youths	68	97	87	66	45	...	26	28
Friends volunteer	Full-time students	35	90	80	71	65	58	...	24
	Other youths	30	89	86	64	42	60	...	14
Religious obligations or beliefs	Full-time students	20	96	89	76	55	77	42	...
	Other youths	22	98	86	77	45	87	19	...

Source: National Survey of Giving, Volunteering and Participating, 1997

Note: Volunteers were asked to give as many reasons as applicable.

important respect: youth unemployment rose by 3.1 percentage points, compared with 0.2 points for the labour force aged 25 and over (Sunter and Bowlby, 1998). The rise was much greater for teens (6.7%)—the group whose volunteerism increased significantly—than for mature youths (0.9%).

The changing situation for youths with jobs may have influenced their decision to volunteer as well. Some youths work part time even though they would prefer to work full time. The percentage of employed youths working “involuntarily” in part-time employment rose over the decade from 7.4% to 11.2%, or 3.8 percentage points. In contrast, the percentage for workers 25 or older rose by only 1.9 points, from 3.2% to 5.1%. Both the absolute and relative rise of involuntary part-time work among young people may have encouraged them to volunteer in order to increase their full-time employment prospects.

The rise in both unemployment and involuntary part-time employment among young people hints at a possible labour market motive for the surge in volun-

teering. Unfortunately, the change in the reasons underlying volunteering over the decade cannot be tracked because these motivations were not asked in the survey of 1987. Answers in 1997 at least allow for the possibility that changes in labour market conditions contributed to the increase in youth volunteering.

What motivates youths to volunteer?

Some 91% of full-time student volunteers and 94% of other youths said they volunteered because they believed in the cause (Table 3). This finding is similar to that for all volunteers (Hall et al., 1998) and seniors (Jones, 1999).

Full-time students seem more likely than other youths to volunteer for job-related reasons: 59% did so, compared with 43% of other young people. Some 70%, compared with 64% of other youths, volunteered to explore their own strengths. Another job-related reason, however—to use skills and experience—was about equally important for both groups.

For young people no longer in school full time, the development of job-related skills was still important. Some 82% volunteered to use their skills and experience, and 64% did so to explore their own strengths. Having been personally affected by the cause was also a commonly mentioned reason for volunteering among these youths (68%). Only 55% of full-time students gave that reason for giving their time.

Both full-time students and other youth volunteers reported an average of four reasons for volunteering. If pairs of motivations are considered, the presumed connection between job-related reasons and full-time studies is even stronger than it is when reasons are examined in isolation. For example, among youths volunteering to use their skills and experience, the students were much more likely than other young people to volunteer in order to improve job opportunities as well (67% versus 50%) (Table 3). Likewise, among youths volunteering to explore their own strengths, full-time students were much more likely than others to volunteer in order to improve job opportunities (70% versus 53%). Even among those volunteering for reasons unrelated to jobs, the students were more likely

than other youths to cite jobs as an additional consideration. Of young people volunteering because friends did so, for example, 65% of full-time students also mentioned job opportunities, while 42% of other youths did.

This study also examined popular three-way combinations of reasons for youth volunteering (not shown). Certain combinations had a wider appeal than others. Some 60% of full-time students listed the following three motives: belief in the cause supported by the volunteer organization, use of their skills and experience, and a desire to explore their own strengths. Just over half added to the first two reasons a wish to improve job opportunities. Other youths also gave these first two reasons, in combination with the desire to use their own strengths (58%) or being personally affected by the cause supported by the organization (or knowing someone who was affected) (57%). For both full-time students and other youths, both altruism and self-interest, especially if job-related, seem to figure in their decision to donate time to a volunteer organization.

Table 4: Benefits of volunteering

		Additional benefits							
		Cited benefits	Interper- sonal	Commu- nication	Know- ledge	Organ- ization	Fund- raising	Office skills	Other skills
Benefit			%						
Interpersonal skills	Full-time students	82	...	90	76	72	52	41	17
	Other youths	86	...	83	71	67	40	30	12
Communication skills	Full-time students	79	94	...	79	73	54	42	17
	Other youths	74	96	...	72	72	46	34	14
Increased knowledge	Full-time students	69	91	90	...	74	52	45	18
	Other youths	66	92	81	...	71	43	33	14
Organizational and managerial skills	Full-time students	64	92	90	80	...	56	51	17
	Other youths	61	95	87	77	...	46	39	14
Fundraising skills	Full-time students	49	87	87	74	73	...	46	16
	Other youths	38	92	91	75	75	...	40	--
Technical or office skills	Full-time students	37	91	89	84	88	60	...	18
	Other youths	28	92	89	78	85	53	...	--
Other skills or knowledge	Full-time students	15	95	88	85	74	51	45	...
	Other youths	12	86	83	74	68	--	--	...

Source: National Survey of Giving, Volunteering and Participating, 1997

Note: Volunteers were asked to give as many benefits as applicable.

Does volunteering benefit youths?

Both full-time students and other youths said the greatest benefit gained by volunteering was an improvement in interpersonal skills, followed by communication skills, knowledge, organizational and managerial skills, fundraising skills, technical or office skills, and other skills or knowledge (Table 4). These findings mirror those for all volunteers (Hall et al., 1998).

Large percentages of both full-time students and other youths—from 66% to 86%—reported improvements in interpersonal and communication skills, and increased knowledge. Organizational or managerial skill benefits were reported by 64% of students and 61% of other youths. The students were more likely than other youths to acquire all the listed benefits except interpersonal skills.

On average, full-time students reported 3.9 benefits, while other youths noted 3.7. Of the youths reporting gains in interpersonal skills, the students were more likely than others to cite gains in communication skills as well (by a margin of 7 percentage points), or in fundraising skills (12 points) or technical or office skills (11 points). Of those who said they had gained knowledge, students were also more inclined than other youths to report improvements in communication skills (by a margin of 9 points), fundraising skills (9 points), or technical or office skills (12 points).

Volunteer organizations may be interested in learning which combined benefits are attractive to young people. For both full-time students and other youths, only two groups of three benefits were

reported by over 50% of volunteers: interpersonal skills, communication skills, and either increased knowledge, or organizational and managerial skills. The students were more likely to report the first combination (59%) than the second (55%). These combinations were reported by an equal percentage of other youths: 52%.

Summary

In contrast to the slower growth in the volunteer participation rate of other age groups, the rate among youths almost doubled between 1987 and 1997, increasing from 18% to 33%. The youth share of all volunteer jobs also grew.

The largest component of the growth among young volunteers was that attributable to a growing inclination of full-time students to volunteer their time. This alone accounted for over half of the rise in the youth volunteer rate. The second most important component, the rise in the likelihood of other youths to volunteer, accounted for another 35% of the growth. The increasing proportion of full-time students in this age group accounted for the remaining 14%.

The study also examined the volunteer rate for various sub-populations of youths. Increases were relatively large in Ontario and Saskatchewan, and relatively small in New Brunswick and British Columbia. The teen rate in Canada grew by 17 percentage points to reach 37%, while the rate for mature youths increased by 13 points, to reach 29%.

The youth share of multipurpose groups and service club organizations grew from 6% to 22% of all youth volunteer jobs.

Social service, care and support volunteer organizations registered an increase of 5 percentage points, to 10% of youth jobs. Education and youth development organizations experienced the greatest loss.

The rise in the youth unemployment rate relative to that of older workers may have encouraged some young people, especially teens, to volunteer. Young people's involuntary part-time employment rate also rose faster than that for the older employed population over the period. This rise may have prompted some youths to volunteer in order to improve their full-time job prospects.

Full-time students were more inclined than other youths to volunteer for job-related motives. This was especially true of those volunteering to improve job opportunities, and to explore their strengths. Volunteering to improve job-related skills was also an important motive for other youths.

In 1997, both groups were most likely to note increased interpersonal skills as a benefit of volunteer activity, followed by communication skills, increased knowledge, and organizational and managerial skills. Other youths were more inclined than full-time students to mention interpersonal skills.

Perspectives

Notes

1 The evidence supports this view. Of youths aged 20 to 24, for example, those who were volunteers were more likely than non-volunteers to vote in the last national election (69% versus 55%), provincial elections (62% versus 49%) and local elections (38% versus 34%).

2 In September 1999, Ontario became the first province to require community service of its high school students, offering a credit for 40 hours of service. One study found that receiving credit hours was positively associated with volunteer work two years after college graduation (Fitzsimmons, 1986).

3 Youth volunteer *jobs*, rather than volunteers, are referred to in this section, because any one person may be volunteering in two or more organizations.

References

Bowlby, G. and P. Jennings. "Youth employment: A lesson on its decline." *Education Quarterly Review* (Statistics Canada, Catalogue no. 81-003-XPB) 5, no. 3 (1999): 36-42.

Fitzsimmons, V.R. "Socialization and volunteer work: the role of parents and college volunteering." *Journal of Voluntary Action Research* 15 no. 4 (October-December 1986): 57-66.

Hall, M.H., T. Knighton, P. Reed, P. Bussière, D. McRae and P. Bowen. *Caring Canadians, Involved Canadians: Highlights from the 1997 National Survey of Giving, Volunteering and Participation*. Catalogue no. 71-542-XPE. Ottawa: Statistics Canada, 1998.

Jones, F. "Seniors who volunteer." *Perspectives on Labour and Income* (Statistics Canada, Catalogue no. 75-001-XPE) 11, no. 3 (Autumn 1999): 9-17.

Serow, R.C., J. Ciechalski and C. Daye. "Students as volunteers: personal competence, social diversity, and participation in community service." *Urban Education* 25, no. 1 (July 1990): 157-168.

Sundeen, R.A. and S.A. Raskoff. "Teen-age volunteers and their values." *Nonprofit and Voluntary Sector Quarterly* 24, no. 4 (Winter 1995): 337-357.

Sunter, D. and G. Bowlby. "Labour force participation in the 1990s." *Perspectives on Labour and Income* (Statistics Canada, Catalogue no. 75-001-XPE) 10, no. 3 (Autumn 1998): 15-21.

Appendix

How the increase in the youth volunteer rate was decomposed (shift-share technique)

The overall youth volunteer rate is the volunteer rate of full-time students added to the volunteer rate of other youths, each weighted by their share of the youth population. That is,

$$VR_{youths} = VR_{full-time\ students} \cdot P_{full-time\ students} + VR_{other\ youths} \cdot P_{other\ youths}$$

Shift-share analysis was used to decompose the change in this rate over time. In the first part of the equation, the volunteer rate for full-time students between 1987 and 1997 is varied, while the average of the full-time student share of the population in both periods is held constant.

Effect of change in full-time student youth volunteer rate =

$$(VR_{full-time\ students\ 1987} - VR_{full-time\ students\ 1997}) \cdot \bar{P}_{full-time\ students}$$

This quantifies the effect of the changing full-time student volunteer rate. Similarly, the full-time student share of the population is varied, while the average of the full-time student volunteer rate is held constant.

Effect of change in the proportion of youths who are attending school full time =

$$(P_{full-time\ students\ 1987} - P_{full-time\ students\ 1997}) \cdot \overline{VR}_{full-time\ students}$$

This method is then applied to the second part of the equation to determine the effect of a change in the "other" youth volunteer rate and the effect of a change in the proportion of youths who are not attending school full time. Because they cannot change independent of one another, the effects of changes in the proportions attending school full time and not attending school full time are added together. This gives the effect of increased full-time school attendance on the overall volunteer rate.

Note: These formulae have been adapted from Bowlby and Jennings (1999).

The school-to-work transition

Geoff Bowlby

The movement from school to work is something most Canadians experience at some point in their lives. For some, the transition to the world of work is smooth, occurring quickly and with relative ease. For others, finding their first job after school can take a long time.

The school-to-work transition

Youths can be divided into four categories based on their labour market activity and school attendance: attending school and not working; attending school and working; working and not going to school; and not working or going to school.

The first category is the largest. Although many of these youths have worked before, some of them have not yet begun the school-to-work transition.

Between 1989 and 1993, the percentage of 15-to-24 year-olds who were in school and not working increased from 29% to 38%. It has grown slightly since then, to 40% by 1998 (Table 1).

The number of youths attending school and working at the same time gives an indication of how many are beginning the school-to-work transition. These youths are trying out the labour market, often for the first time, and obtaining the necessary work experience for their after-school years.

In 1989, about 22% of young people were going to school and working at the same time. Over the 1990s, this did not change much, despite an increase in school attendance.

Working and not attending school, the most common activity for youths in 1989, is now less common: in 1989, some 37% of young people were out of

Adapted from an article in Labour Force Update (Statistics Canada, Catalogue no. 71-005-XPB) 3, no. 4 (Autumn 1999). Geoff Bowlby is with the Labour Statistics Division. He can be reached at (613) 951-3325 or bowlgeo@statcan.ca.

Table 1: School and work activities, youths 15 to 24

	Attending school		Not attending school	
	Not working	Working	Working	Not working
	%			
1984	30	15	37	17
1986	30	18	38	15
1988	29	21	37	12
1990	30	22	35	13
1992	36	22	29	13
1994	38	22	28	13
1996	39	21	28	12
1998	40	21	28	11

Source: Labour Force Survey, eight-month average excluding May to August

school and working. This percentage fell dramatically during the early 1990s, hitting 28% by 1993 where it remained for the next five years (Chart A).

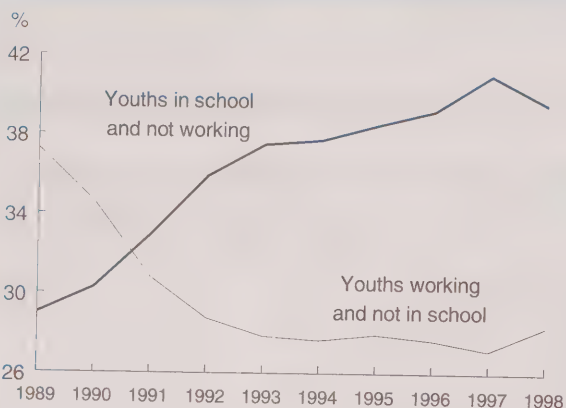
The drop coincides with the large increase in the percentage of youths who were not working but who were in school. This suggests that the early 1990s recession forced some young people out of work and back to school or put pressure on them to continue their schooling.

Finally, the remaining 11% of youths were neither in school nor working. This percentage changed little over the 1990s.

From these broad measures, it is clear that fewer of today's youths have completed their initial transition from school to work. Also, school attendance among youths is historically quite high (61%). Is this an indication that youths are putting off the school-to-work transition until they are older?

A technique for measuring the average start and end age of the school-to-work transition, developed by the Organisation for Economic Development and

Chart A: Youths are now less likely to be working and not going to school.



Source: Labour Force Survey, eight-month average excluding May to August

Co-operation (OECD), suggests that the answer to this question is "yes."

According to the OECD, this transition takes place "from the age at which young people are no longer predominately studying without working, to the age at which the majority are working without studying" (OECD, 1997). Using this definition, it is clear that the transition process in Canada has become longer in recent years (Chart B).

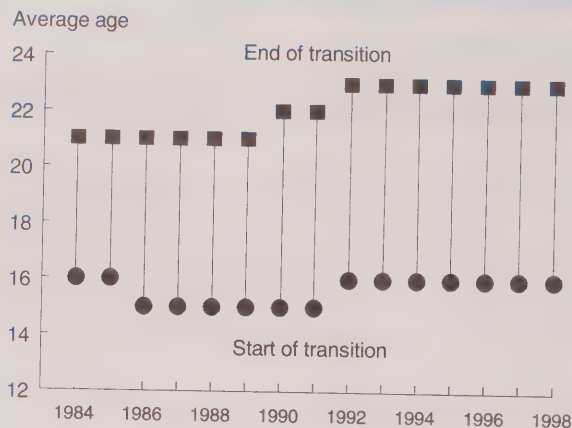
In 1985, the average length of the transition was six years. In that year, it began at age 16 and ended at 21. The next year, as youths began to combine school and work at a younger age, the transition began at 15 and ended at 21. This pattern continued for a number of years, until 1990 and 1991, when a poorer job market extended the transition to age 22.

In 1998, the school-to-work transition took, on average, eight years, beginning at age 16 and ending at age 23. These have been the average start and end ages since 1992.

The final shift into the labour market

While the evidence suggests that the school-to-work transition is taking longer, the reasons for this are unclear. Young people are staying in school longer, but they may also be taking longer to find work once they graduate.

Chart B: The school-to-work transition is taking longer.



Source: Labour Force Survey, eight-month average excluding May to August

Note: According to the OECD, the starting age of the school-to-work transition is the first age at which less than 75% of youths are only attending school. The end of the transition occurs at the first age when more than 50% are only working.

The Survey of Labour and Income Dynamics (SLID), which tracks people over time (that is, a longitudinal survey), makes it possible to see the rate at which graduates make the transition from full-time schooling to full-time employment.

According to SLID, some 225,000 young people aged 15 to 29 in 1996 had graduated from full-time studies and had not returned to school in the 12 months following graduation (non-returning graduates). Of these, 181,000 (80%) had found full-time work within a year.

The proportion of non-returning graduates who have found full-time work tends to plateau after the 6-month mark. It would appear that if graduates have not found full-time work after 6 months, their job search becomes increasingly difficult.

After 6 months, about 70% of non-returning 1996 graduates had found full-time work, leaving only 10% who found full-time employment in months 7 through 12 (Chart C). About 30% of graduates started full-time work the month they graduated.

Men make a faster transition into full-time work. This may reflect the stronger tendency for women to work part time for family-related reasons, and not necessarily a more difficult labour market for women.

In 1996, some 86% of male graduates had found full-time work within a year of graduating, compared with 75% of women.

Consistent with other indicators, graduates with only a high school diploma had a harder time finding work than those with postsecondary education. While about 86% of postsecondary graduates had found full-time work within a year, only two-thirds of high school graduates had done so.

The rate at which graduates in 1994, 1995 and 1996 made the transition to work was, as expected, dependent upon the labour market conditions in the 12 months following graduation. Graduates in 1994, a year of strong job growth, had the most success finding full-time work once they graduated. At 12 months after graduation, 83% of the non-returning graduates had found full-time work. In that year, overall employment increased by 381,000 or 3%.

In contrast, the graduates of 1995, who faced the toughest market of the three groups, had the least success finding full-time work. Just under 70% of graduates had done so by the 12-month mark. In 1995, employment rose by only 92,000 or under 1%.

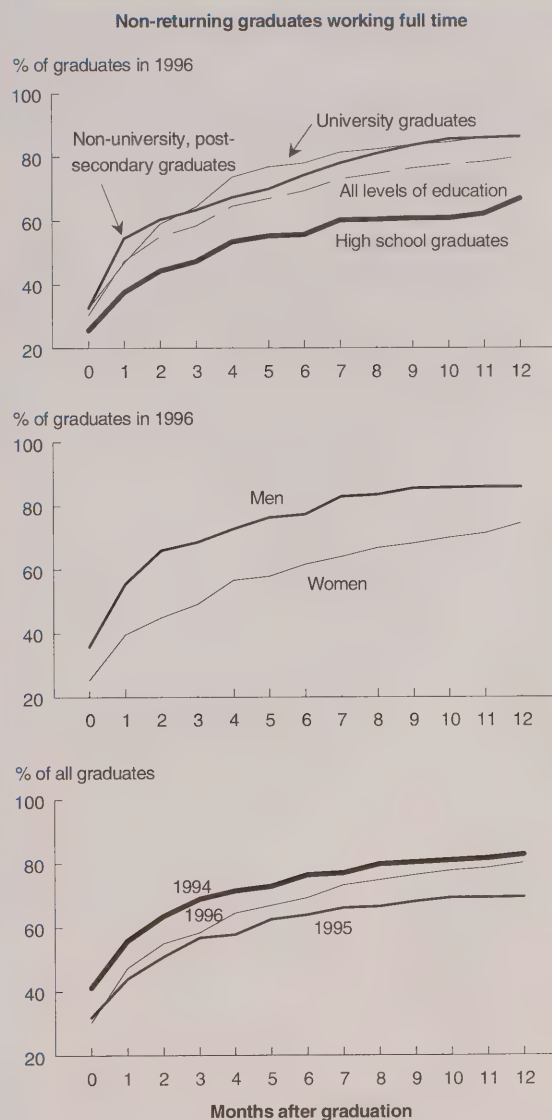
Labour market conditions for graduates overall

To fully understand the school-to-work transition, one must look not only at the transition process but also at the activities of youths once they leave school. The type of job found can give an indication of the degree of success youths have had easing into the workforce. In the following, 25-to-29 year-olds are also examined since many people attempt to make their first full-fledged entry into the workforce at this age.

While labour market conditions for young graduates deteriorated markedly during the early to mid-1990s, the school-to-work transition seems to have become easier recently.

Although the employment rate was almost 78% at the start of the decade, it bottomed at 72% in 1992. Between 1992 and 1996, it recovered slowly, increasing only 2 percentage points.

Chart C: Men and postsecondary graduates find full-time work sooner.



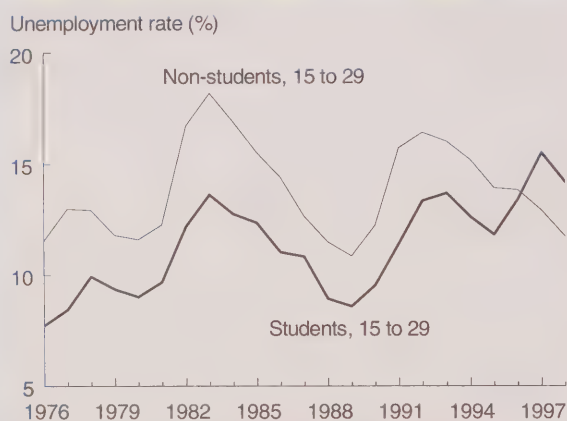
Source: Survey of Labour and Income Dynamics

Since 1996, however, the employment rate has approached its pre-recession level, hitting 77% in 1998. Despite a drop in their population, 62,000 more young non-students were working in 1998 than in 1996. This recent job growth has helped lower the non-student unemployment rate.

The school-to-work transition

Between 1989 and 1992, the unemployment rate for 15-to-29 year-old non-students rose from 10.8% to 16.4%. It fell thereafter, reaching 11.7% by 1998. For the first time, the non-student unemployment rate was lower than that for students aged 15 to 29 (Chart D). While non-students have enjoyed employment growth and lower unemployment, the job growth among students has been offset by an increase in the number looking for work, which has kept their unemployment rate high.

Chart D: The non-student youth unemployment rate has fallen below that of students.



Source: Labour Force Survey, eight-month average excluding May to August

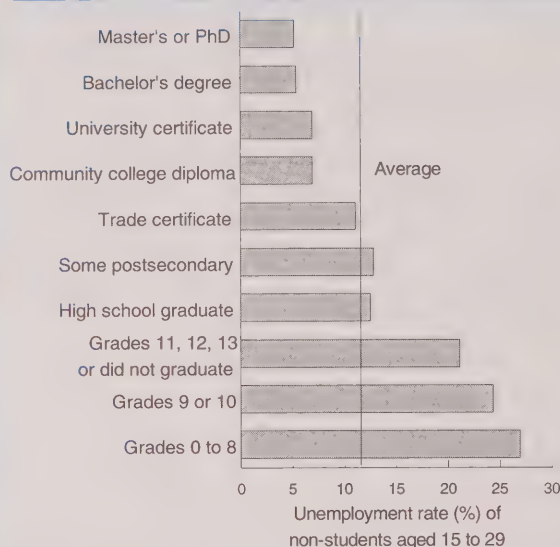
Education makes a difference

Clearly, education is key to making a successful school-to-work transition. Labour market conditions are much better for youths who have graduated from university than for those who are not in school and who did not complete primary or high school (Chart E).

In 1998, the employment rate for 15-to-29 year-old non-students with a master's degree or PhD was 90.4%. At the other end of the spectrum, for those who did not complete secondary school, the employment rate was only 54.7%.

Unemployment rates show a similar disparity. The unemployment rate for 15-to-29 year-old non-students with less than a high school education was 23.3%. For those with a master's degree or PhD, the rate was 5.2%.

Chart E: The more education, the less chance of unemployment.



Source: Labour Force Survey, 1998, eight-month average excluding May to August

Who has found work as conditions improved recently? This job growth has been strong enough to affect even the non-students with the least formal education, as employment rates for people at all levels of education have improved.

Job quality

For the first time in the 1990s full-time employment rose among non-student youths in 1998 (2.6%). Even with this growth, the proportion of employed non-student youths with part-time work remained stubbornly high, at 15.6% (Chart F).

The job turnaround for non-student youths seems to have affected their average wage. Although they continued to make less than adults, non-student youths narrowed the gap between their hourly wage and that of adults.

In 1998, non-students aged 15 to 29 made \$0.78 for every \$1 earned by those 30 and older (Table 2). This increased slightly, from \$0.77 in 1997.

Estimating the school-to-work transition

The Survey of Labour and Income Dynamics (SLID) is a longitudinal household survey designed to capture changes in the economic well-being of individuals and families over time, as well as the determinants of their well-being. Individuals are interviewed annually for six years and are asked about their labour market experiences, income and family circumstances.

SLID determines whether a person has been employed in any month of the year. As well, it determines whether the respondent is attending school full time each month and, if so, the type of school attended. Finally, information is collected on the respondent's year of graduation.

The first step in estimating the school-to-work transition was to select people between the ages of 16 and 30 who had graduated in 1993, 1994, 1995 or 1996. Ages 16 to 30 are the closest to the common 15-to-29 category from the Labour Force Survey (LFS). Because SLID assigns a respondent's age at the end of the year, those 16 to 30 years old would appear as 15 to 29 in the LFS, which records respondents' ages monthly.

Then, full-time students who had graduated at some point in the year were identified. Their last month of school attendance is assumed to be the month in which they graduated.

Next, the study group was narrowed to include only those graduates who had not returned to school full time in the 12 months following graduation.

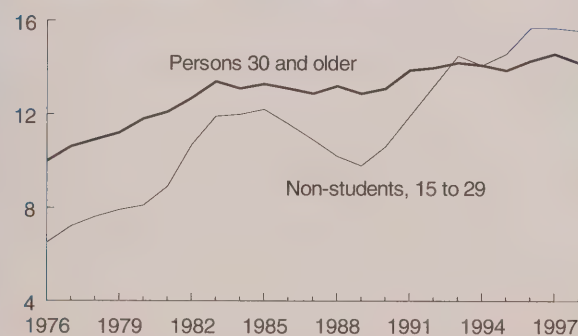
The final step was to look at the labour market status of the non-returning, full-time school graduates in the months following graduation. With this information, it was possible to identify the month in which people started their first full-time job.

Some of the young people who are deemed to have "started work the same month as graduation" in this analysis may actually have been working in their job prior to graduation. Using the above methodology, one cannot identify a full-time student working full time prior to graduation and in the same month as graduation. However, according to the LFS only 1.7% of full-time students in 1996 were also working full time, so this is not thought to introduce major problems to the analysis.

Although the methodology provides insight into the school-to-work transition process, this is not a comprehensive study because certain groups are excluded: part-time students making the transition to full-time work; full-time students who have made a transition to part-time work; and those who have left school but who did not graduate. These people could, however, be studied using similar applications of the SLID data.

Chart F: Part-time employment is now more common among 15-to-29 year-old non-students than among older workers.

Part-time employment as a % of total employment



Source: Labour Force Survey, eight-month average excluding May to August

Table 2: Average wages for non-students 15 to 29 and persons 30 and older

	Average hourly wage	Average weekly wage	Ratio	
			Hourly	Weekly
\$				
1997				
15 to 29	10.70	392.55	.77	.75
30 and older	13.96	525.13		
1998				
15 to 29	11.02	404.26	.78	.76
30 and older	14.17	534.06		

Source: Labour Force Survey

Summary

The school-to-work transition is probably more complex than ever. Many young people work while still going to school. Others, once graduated, may return to school as adults. Hence, the line between the two activities has become blurred.

This is not to say that the school-to-work transition cannot be measured. On average, it took eight years in 1998, beginning at age 16 and ending at age 23. As well, data from the Survey of Labour and Income Dynamics give an indication of the average time it takes to find work after graduation. While many young people start work the same month they graduate, most take longer. Approximately 80% of full-time students who graduated in 1996 found full-time work within a year. The percentage of graduates who had found full-time work tended to plateau six months after graduation.

Although the start and end ages have remained unchanged over the last seven years, other indicators show that the school-to-work transition has become easier recently. Since 1996, the employment rate for

15-to-29 year-old non-students has jumped close to its pre-recession level, with a large increase in employment despite a drop in their population. This has led to a continued decline in the non-student youth unemployment rate.

Perspectives

References

Organisation for Economic Co-operation and Development. *1996 Education at a Glance*. Analysis. Paris: OECD, 1997.

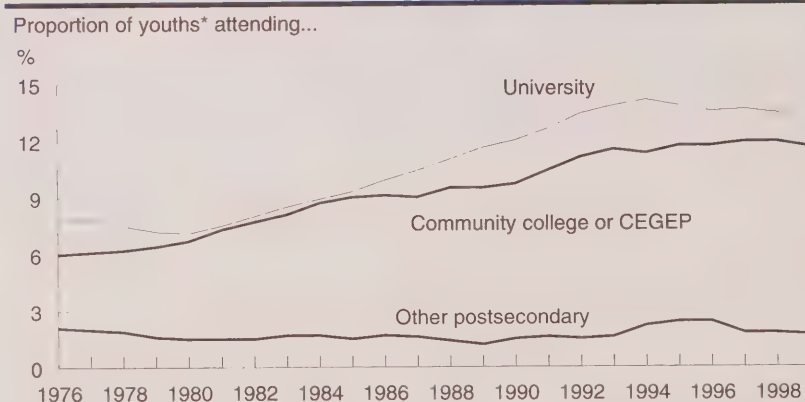
Statistics Canada. "Youths and the labour market." *Labour Force Update* (Statistics Canada, Catalogue no. 71-005-XPB) 1, no. 1 (Spring 1997).

Since this article was written, the data have been revised. New numbers will be available soon. For information about the revisions to the LFS, see "What's new?" in this issue.

Speaking of students...

Given the strong relationship between education and labour market success, it is perhaps not surprising that youths today are more likely to continue their education past high school.

Education has consistently been shown to affect labour market outcomes. For example, in 1998 young people out of school without a high school diploma were over three times as likely to be unemployed as young people out of school with a university degree.



Source: Labour Force Survey, eight-month average excluding May to August
* Age 15 to 24.

Perspectives

Long working hours and health

Margot Shields

A growing share of the workforce is putting in long hours on the job (see *Working hours*). Whether long hours adversely affect health has been debated for decades. However, policy makers considering the regulation of working hours have had difficulty making decisions based on scientific research (Harrington, 1994).

In Japan, where long working hours are common, a growing number of workers have been dying from cardiovascular causes in their most productive years. Studies based on workers' compensation claims have found that many of the victims had been putting in long hours before they died (Uehata, 1991; Nishiyama and Johnson, 1997). The Japanese have named such deaths *Karoshi*, meaning "death from overwork."

Japanese researchers have proposed a *Karoshi* model to examine the relationship between long hours and cardiovascular disease (Uehata, 1991). It is hypothesized that long hours bring about unhealthy lifestyle changes such as smoking, alcohol abuse, lack of physical activity, sleeplessness, poor eating habits, and fewer chances for medical examinations. Prolonged periods of working long hours may increase anxiety, strain and irritability. Over time, people can become fatigued and develop a propensity to obesity. The cumulative effect may be cardiovascular disease.

Using longitudinal data from the first two cycles of the National Population Health Survey (NPHS) (1994-95 and 1996-97), this article examines Canadian workers aged 25 to 54 who worked at least 35 hours a week in 1994-95. People in this age range are the most likely to feel stress from the "time-crunch," as they juggle work, family and personal responsibilities (Frederick, 1995).

Adapted from an article in Health Reports (Statistics Canada, Catalogue no. 82-003-XPB) 11, no. 2 (Autumn 1999). Margot Shields is with the Health Statistics Division. She can be reached at (613) 951-4177 or shiemar@statcan.ca.

Working hours

At the turn of the century, a typical worker in Canada put in a 60-hour week. In the following decades, largely as a result of union activity, efforts were made to reduce the length of the work week in the interests of health and safety. It was widely argued that more opportunity for rest and time to participate more fully in family life would have a positive effect on workers' physical and mental health (Benimadhu, 1987). As a result, there was a general downturn in working hours, and the average work week stabilized in the 35-to-40 hour range in the mid-1960s.

However, average weekly hours provide an incomplete picture. Although average hours worked per week have changed very little since the mid-1960s, a new trend has developed since the economic downturn of the early 1980s: "hours polarization" (Morissette and Sunter, 1994; Sunter and Morissette, 1994; Sheridan, Sunter and Diverty, 1996). The proportions of male workers putting in both longer (41 or more) and shorter weekly hours (less than 35) have risen. Among female workers, a growing percentage work long hours. The proportion of the population working long hours is highest at ages 25 to 54, and the shift out of standard to long hours has been the most skewed for women aged 35 to 54 (Sheridan, Sunter and Diverty, 1996).

Distribution of usual weekly hours, employees aged 25 and over, by sex

	1980	1985	1989	1995
	%			
Men				
1 to 34	4.4	5.2	5.2	7.1
35 to 40	77.5	75.0	73.4	68.6
41 and over	18.0	19.7	21.4	24.3
Women				
1 to 34	29.9	30.9	29.3	30.1
35 to 40	64.5	62.6	63.4	61.3
41 and over	5.6	6.5	7.3	8.6

Source: Labour Force Survey

The data are analyzed in the context of the early phases of the *Karoshi* model to determine whether long hours (41 or more a week) are associated with depression and with changes in health behaviours. Four indicators—weight, smoking, drinking, and physical activity—are used to investigate whether moving from standard to long hours is related to unhealthful lifestyle changes (see *Data source and limitations*).

Working hours and health

Surprisingly few studies have examined associations between working hours and health status and behaviours. Although the effects of shift work have been studied extensively, it is rare for research to focus on the quantity of hours (Spurgeon, Harrington and Cooper, 1997). Nonetheless, sufficient evidence exists to raise concerns about the health and safety risks of working long hours (Harrington, 1994; Spurgeon, Harrington and Cooper, 1997; World Health Organization, 1985.)

In North America and Europe, research has focused on the association between high job strain (high psychological demands coupled with low decision-making latitude [Karasek and Theorell, 1990]) and health outcomes such as depression, anxiety, migraines, high blood pressure and coronary heart disease (Karasek, 1979; Karasek et al., 1981; Lerner et al., 1994; Wilkins and Beaudet, 1998), and health behaviours such as smoking and excess body weight (Hellerstedt and Jeffery, 1997). However, most research based on the job strain model has not explicitly examined the effect of the number of working hours.

Among the few studies on number of hours worked, a recent report by the Economic and Social Research Council in Great Britain concluded that long hours did have negative health consequences (Sease and Scales, 1998). Researchers found that working long hours increased feelings of stress and was associated with a decline in physical exercise. For women, long hours were associated with several conditions, including problems with arms, legs, hands, and blood pressure.

The final stage of the *Karoshi* model—cardiovascular disease—has not been investigated extensively. Japanese research, based on case studies of small samples of male subjects, suggests an association between long working hours, high blood pressure and heart disease (Sokejima and Kagamimori, 1998; Hayashi et al., 1996; Iwasaki et al., 1998).

Workers putting in long hours

In 1994-95, among the population aged 25 to 54 working 35 hours or more per week, a higher percentage of men than women put in long hours. Half of the men reported 41 or more hours of work per week, compared with about one-quarter (28%) of their female counterparts (Table 1). Men working long hours averaged 55 per week; women, 51. Among those working long hours, 32% of the men and 19% of the women put in at least 60 hours per week.

For men, long hours were more common at ages 25 to 34 and 35 to 44 than at age 45 or older. By contrast, for women, working long hours was not

Table 1: Persons who worked 35 hours or more per week throughout 1994-95, by selected characteristics

	Men		Women	
	Total	Long hours*	Total	Long hours*
	'000	%	'000	%
Total	4,414	50	2,789	28
Age				
25 to 34	1,489	52	1,058	26
35 to 44	1,681	53	1,093	28
45 to 54	1,244	43	638	30
Marital status				
Married	3,477	50	2,016	27
Never-married	659	49	410	28
Previously married	278	47	360	32
Child(ren) under age 12 in household				
Yes	1,841	54	1,043	25
No	2,573	47	1,746	29
Education				
High school graduation or less	1,439	45	778	23
Some postsecondary	1,086	50	734	26
Postsecondary graduation	1,880	53	1,272	32
Household income				
Lowest/lower-middle/middle	1,143	53	756	25
Upper-middle	1,978	44	1,255	25
Highest	1,064	58	691	35
Missing	229	49	87	26

Source: National Population Health Survey

Note: Totals may not add because amounts too small to provide reliable estimates were excluded.

* 41 or more hours per week.

significantly related to age. Marital status was not associated with long hours for either male or female workers. However, men in households with young children were significantly more likely than other men to work long hours. For women, the proportion working long hours differed little by the presence of young children at home.

Postsecondary graduates were significantly more likely to work long hours, compared with workers whose formal education had not extended beyond high school. As well, men and women in high income households were more likely than those in middle income households to put in long hours. For men, long hours were also common among those in households with incomes in the low-to-middle range.

Job characteristics

The propensity to work long hours was associated with several aspects of employment (see *Measures of work characteristics*). Men and women in white-collar occupations were more likely to report long hours than were those in clerical, sales and service occupations or in blue-collar occupations (Table 2). High proportions of shift workers and the self-employed worked long hours. And not surprisingly, long hours were very common among those who worked at more than one job or business (94% for men and 82% for women).

However, high job strain, high job insecurity and low supervisor support were not related to working hours. Among persons who reported these situations, no significant differences existed in the proportions working long versus standard hours.

Changing hours

Most people who worked standard hours in 1994-95 continued to do so throughout 1996-97: 64% of men and 69% of women (Table 3). Men who worked long hours in 1994-95 were more likely to continue in 1996-97 (66%). However, this was not the case for women; those who worked long hours in 1994-95 were about as likely to reduce their hours as they were to continue with long hours. And the percentage of men moving from standard to long hours was close to triple the corresponding percentage for women (21% versus 8%).

Table 2: Persons aged 25 to 54 who worked 35 hours or more per week throughout 1994-95, by job characteristics

	Men		Women	
	Total	Long hours*	Total	Long hours*
	'000	%	'000	%
Total	4,414	50	2,789	28
Occupation				
White-collar	1,487	56	1,193	35
Clerical, sales or service	875	46	1,192	22
Blue-collar	1,843	45	275	17
Missing	209	59	130	35
Self-employed				
Yes	795	80	271	67
No	3,619	43	2,518	23
Shift worker				
Yes	976	57	380	36
No	3,438	48	2,409	26
Multiple jobholder				
Yes	247	94	163	82
No	4,167	47	2,626	24
High job strain				
Yes	728	48	816	24
No	3,347	51	1,778	29
Missing	339	42	195	29
High job insecurity				
Yes	1,189	49	778	27
No	2,886	51	1,817	28
Missing	339	42	195	29
Low supervisor support				
Yes	724	52	444	27
No	3,351	50	2,151	28
Missing	339	42	195	29

Source: National Population Health Survey

* 41 or more hours per week.

Weight

Body mass index (BMI) is a measure of weight in relation to height. A BMI greater than 27 is associated with increased occurrence of hypertension, coronary heart disease and diabetes (National Health and Welfare, 1988; Gilmore, 1999). The 25-to-27 range is suggested as a caution zone that may lead to health problems in some people.

Table 3: Working hour patterns, persons aged 25 to 54 who worked 35 hours or more per week throughout 1994-95

	Men	Women
	%	
Standard hours in 1994-95		
Continued standard hours in 1996-97	64	69
Moved to long hours in 1996-97	21	8
Reduced hours in 1996-97	15	23
Long hours in 1994-95		
Continued long hours in 1996-97	66	48
Reduced hours in 1996-97	34	52

Source: National Population Health Survey

Note: Long hours are 41 or more per week.

Among the workers examined in this analysis, a much higher proportion of men than women were overweight in 1994-95 (BMI greater than 27): 36% versus 23% (Table 4). Similarly, the proportion of men having some excess weight (BMI 25 to 27) was close to double that of women: 25%, compared with 13%. The men with excess weight (BMI 25 or higher) averaged 196 pounds (89 kilograms); the women, 168 pounds (76 kilograms).

When factors such as age, education, smoking status, occupation, shift work and work stress were taken into account, men who worked long hours in 1994-95 had increased odds (1.4) of having excess body weight (data not shown). Among women, this association was not found.

Between 1994-95 and 1996-97, the average weight gain was minimal: about one pound (0.45 kilograms) for men and 2 pounds (0.91 kilograms) for women. Nevertheless, approximately 10% of both men and women had an unhealthy weight gain; of these, the men gained an average of 19 pounds (8.6 kilograms), and the women, 21 pounds (9.7 kilograms).

For men, moving from standard to long hours was associated with unhealthy weight gain. And even when factors such as age, education, smoking status, occupation, shift work and work stress were taken into account, men whose hours changed from standard to long had more than twice the odds (2.2) of experiencing an unhealthy weight gain, compared with men who continued to work standard hours (data not shown). Among women, no significant association was found between unhealthy weight gain and a change in work-

ing hours, although there was a significant relationship with job strain. Women classified as having high job strain in 1994-95 had increased odds (1.8) of experiencing an unhealthy weight gain by 1996-97.

Smoking

In 1994-95, some 28% of the male and 25% of the female workers in this analysis were daily smokers (Table 4). No relationship existed, however, between working hours and the propensity to be a daily smoker. As well, unlike other studies that have found an association between job strain and smoking (Hellerstedt and Jeffery, 1997; Green and Johnson, 1990), this analysis found no significant relationship for either sex.

Table 4: Health indicators, persons aged 25 to 54 who worked 35 or more hours per week throughout 1994-95

	Men	Women
	%	
New major depressive episode, 1996-97	3	5
Body mass index, 1994-95		
Some excess weight (BMI 25 to 27)	25	13
Overweight (BMI greater than 27)	36	23
	pounds (kilograms)	
Average weight in 1994-95		
Total	180.7 (82.0)	141.7 (64.3)
BMI 25 or higher	195.7 (88.8)	167.6 (76.0)
Average weight gain by 1996-97	1.2 (0.5)	2.0 (0.9)
% gain	0.9	1.6
Unhealthy gain	19.1 (8.6)	21.4 (9.7)
% with gain	10	10
Daily smoker, 1994-95 (%)	28	25
Increase in daily smoking by 1996-97 (%)	9	7
Average daily increase (cigarettes)	10	8
Increase in weekly alcohol consumption by 1996-97 (%)	34	25
Average weekly increase (drinks)	6	3
Decrease in leisure-time physical activity by 1996-97 (%)	43	41
Average decrease (periods per month)	16	14

Source: National Population Health Survey

Note: Based on male and female longitudinal respondents for whom non-proxy information was available. Excludes "missing."

Between 1994-95 and 1996-97, some 9% of male and 7% of female workers increased their daily smoking; that is, they either became daily smokers (after being non-smokers or occasional smokers) or they increased the number of cigarettes they smoked per day by at least three. Men who increased their smoking did so, on average, by an additional 10 cigarettes per day; women's average daily increase was 8 (Table 4).

For both sexes, changing from standard to long hours was associated with increased smoking. But as is true for weight gain, factors such as age and education can affect smoking behaviour. Therefore, this analysis takes these factors into consideration, along with other employment characteristics such as occupation, shift work and work stress. Men who changed from standard to long hours had more than twice the odds of an increase in daily smoking than men who continued to work standard hours; the corresponding odds for women were more than four times higher (data not shown).

Alcohol consumption

Between 1994-95 and 1996-97, some 34% of male workers and 25% of female workers studied increased their weekly alcohol consumption (Table 4). Men who increased their consumption took, on average, an additional six drinks per week, while women had, on average, three more drinks.

Among women, higher alcohol consumption was associated with changes in working hours. Those who moved from standard to long hours had higher odds of increased consumption, compared with those who continued to work standard hours (data not shown). Women who had worked long hours in 1994-95 and subsequently reduced their hours also had high odds of increased drinking.

For men, an increase in weekly hours was not associated with consuming more alcohol. However, those who had worked standard hours in 1994-95 and reduced their hours by 1996-97 had significantly lower odds of increasing their alcohol consumption. This may reflect health problems that could have prompted the reduction in work hours. Male shift workers, too, had significantly low odds of reporting increased drinking.

Data source and limitations

The data are from the household longitudinal component of the 1994-95 and 1996-97 cycles of the National Population Health Survey, conducted by Statistics Canada (Swain, Catlin and Beaudet, 1999). Results are based on 3,830 adult workers aged 25 to 54 (2,181 men and 1,649 women) who worked 35 hours or more per week throughout the year before their 1994-95 interview.

Multivariate analyses were used to estimate associations between working hours and depression, and changes in weight, smoking, drinking and exercise, while controlling for education, income, occupation, shift work and self-employment, among other socioeconomic and work-related traits.

Respondents were asked their usual weekly working hours and the start and end dates for each job over the previous year. It may have been difficult for some to recall this information. Working hours may be underestimated for those who had a complex work history over the year, particularly if it involved multiple jobs. The calculation to derive average working hours was based on a maximum of three jobs.

Professionals and managers often work unpaid overtime to deal with excessive workloads. These workers may not report those additional hours, which would result in an underestimate of working hours for this group.

Respondents classified as working standard hours in both reference years may not have done so in the intervening year. This may have had an effect on the associations of changes observed between reference years.

The calculation of body mass index was based on self-reported data; some respondents may have under-reported their weight and/or over-reported their height.

Respondents were classified as having experienced a "new" major depressive episode if they experienced depression in the year before the 1996-97 survey but not in the year before the 1994-95 survey. It is possible that these respondents may have had a history of depression; that is, they experienced depression before the NPHS began, or had an episode in the non-survey year.

Physical activity

In 1994-95, male workers included in this analysis exercised, on average, 19 times per month, while female workers exercised 17 times per month. For both sexes, work hours made no significant difference to the average number of times they exercised.

Measures of work characteristics

Occupation was categorized as white-collar (administrative and professional); clerical, sales or service; and blue-collar, based on the 1980 Standard Occupational Classification system.

Respondents were asked if they "worked mainly for others for wages, salary, or commission, or in their own business, farm or professional practice." The latter were classified as *self-employed*. Unpaid family workers were excluded from the analysis.

Respondents who reported working anything but a regular daytime shift were coded as *shift workers* (including evening shift, night shift, rotating shift, split shift, irregular/on call schedule or other).

Some people had more than one job at the same time during the reference year. Those who held two or more jobs concurrently throughout 1994-95 were classified as *multiple jobholders*.

When a respondent had more than one job during the reference year, the questions on occupation, self-employment, and shift work were asked about the main job.

Respondents were classified as working standard hours if, on average, they worked 35 to 40 hours per week, and as working long hours if, on average, they worked 41 or more hours. The analysis in this article is based only

on persons who worked 35 or more hours per week throughout reference year 1994-95.

The study examined the following categories of average *working hours* across reference years:

- n standard-standard: standard hours the entire year in both reference years
- n standard-long: standard hours for the entire reference year 1994-95 and long hours for the entire reference year 1996-97
- n standard-reduced: standard hours for the entire 1994-95 reference year, and reduced hours (less than 35 per week) or weeks (less than 52) in reference year 1996-97
- n long-long: long hours for the entire year in both reference years
- n long-reduced: long hours for the entire 1994-95 reference year, and reduced hours (less than 41 per week) or weeks (less than 52) in reference year 1996-97

The questions on job strain, job insecurity and supervisor support were asked in the 1994-95 survey about the job the respondent had at the time of the interview. To measure *job strain*, people were asked to rank their responses to the following seven statements using a 5-point scale ranging from "strongly agree" (a score of 1) to "strongly disagree" (a score of 5).

1. Your job requires that you learn new things (reverse score).
2. Your job requires a high level of skill (reverse score).
3. Your job allows you freedom to decide how you do your job (reverse score).
4. Your job requires that you do things over and over.
5. Your job is very hectic (reverse score).
6. You are free from conflicting demands that others make.
7. You have a lot to say about what happens in your job (reverse score).

Job strain was measured as the ratio of psychological demands (items 5 and 6) to decision latitude (items 1, 2, 3, 4 and 7).

Job insecurity was measured by the statement, "Your job security is good." Respondents who replied "neither agree nor disagree," "disagree," or "strongly disagree" were categorized as experiencing job insecurity.

Supervisor support was measured by the statement, "Your supervisor is helpful in getting the job done." Respondents who said they disagreed or strongly disagreed were categorized as receiving low support from their supervisor.

Between 1994-95 and 1996-97, some 43% of men and 41% of women reduced the number of times they exercised. However, those who decreased their physical activity tended to have had relatively high levels to begin with: the men had exercised an average 29 times per month in 1994-95, and the women, 27 times. By 1996-97, these men and women had reduced their exercise level to an average 13 times per month.

However, changes in working hours were not related to a decrease in physical activity. The odds that workers who moved from standard to long hours would report fewer periods of exercise were not sig-

nificantly different from the odds for workers who continued with standard hours (data not shown). Thus, among the four lifestyle consequences of long hours that are hypothesized by the *Karoshi* model and that are examined in this analysis, a reduction in physical activity is the only one not supported by NPHS data.

These findings are somewhat unexpected, as an increase in time on the job is apt to reduce the time available for exercise. Furthermore, they run counter to the observations in the previously mentioned British study (Sease and Scales, 1998). However, those researchers used a more detailed breakdown of hours

of work, and detected an association between “excessively long hours” (60 or more a week) and lower levels of physical activity. Moreover, the British study did not report the relationship between changes in working hours and time devoted to physical activity.

A finer breakdown of working hours in the NPHS data—standard (35 to 40 hours per week), somewhat long (41 to 59 hours), and excessively long (60 or more hours)—revealed modest decreases in exercise levels among women who moved from standard to somewhat long hours, and among men who moved from somewhat long to excessively long hours. All other cases showed modest increases in exercise levels. When the analysis was repeated eliminating those who did not exercise at all in 1994-95, the patterns were similar.

Some respondents may have used exercise to cope with potential stressors associated with long working hours. However, seasonality may also play a role. The time devoted to exercise varies throughout the year and tends to peak in the summer. NPHS respondents’ activity levels were measured only once in each survey cycle, and individuals who increased their working hours from standard to long or somewhat long to 60 or more hours per week were more likely to have been interviewed in the summer.

Depression

Previous studies have shown a number of mental health problems to be related to the work environment (Karasek, 1979; Lerner et al.,

1994). However, most of the emphasis has been on job strain, with little attention paid to working hours.

Of the population aged 25 to 54 who worked 35 or more hours per week throughout 1994-95, some 5% of women and 3% of men were classified as having experienced a “new” major depressive episode at some time in the 12 months before their 1996-97 interview (Table 4). Women who worked long hours in 1994-95 had 2.2 times the odds of noting a major depressive episode, compared with those who worked standard hours (data not shown). For men, no relationship was found between depression and long working hours. However, consistent with previous studies, high job strain was related to depression for both sexes.

Conclusion

From the turn of the century to the 1960s, Canada experienced a decline in working hours, which led some economists to predict a 32-hour work week (Hameed, 1974). This has not happened. In fact, the proportions of men and women putting in long hours have been rising since the early 1980s.

In 1994-95, half of male and over a quarter of female full-time year-round workers spent at least 41 hours a week on the job. For both sexes, long hours were associated with high educational attainment, white-collar occupations, and predictably, self-employment, shift work and multiple jobholding. For men, long hours were also associated with being aged 25 to 44, and with having young children at home.

Relatively little research has been devoted to the health implications of working long hours. It is not yet known whether the Japanese *Karoshi* model can be applied to Canada. However, data from the National Population Health Survey indicate that switching from standard to long hours between 1994-95 and 1996-97 increased the risk of certain negative health behaviours. Both men and women whose work schedules changed in this way had high odds of increased cigarette consumption, compared with workers who put in standard hours in both periods. Men who reported such a change in working hours had high odds of an unhealthy weight gain, compared with those who maintained standard hours. Women whose hours lengthened from standard to long had high odds of increased alcohol consumption, compared with women who continued with standard hours. In addition, women who worked long hours in 1994-95 had increased odds of subsequently experiencing depression, compared with those who worked standard hours.

Perspectives

Readers who wish to see tables presenting the odds ratios mentioned in this article should consult the full study: “Long working hours and health,” *Health Reports* (Statistics Canada, Catalogue no. 82-003-XPB) 11, no. 2 (Autumn 1999): 33-48.

■ References

- Benimadhu, P. *Hours of work: Trends and Attitudes in Canada*. A Conference Board of Canada report from the Compensation Research Centre, Report 18-87. Ottawa: The Board, 1987.
- Frederick, J.A. *As Time Goes by...Time Use of Canadians*. Catalogue no. 89-544-XPE. Ottawa: Statistics Canada, 1995.
- Gilmore, J. "Body mass index and health." *Health Reports* (Statistics Canada, Catalogue no. 82-003-XPB) 11, no. 1 (Summer 1999): 31-43.
- Green, K.L. and J.V. Johnson. "The effects of psychosocial work organization on patterns of cigarette smoking among male chemical plant employees." *American Journal of Public Health* 80, no. 11 (1990): 1368-71.
- Hameed, S.M.A. "Four day, 32 hour work week: Analysis and prospects." In *Three or Four Work Day Work Week*, edited by S.M.A. Hameed and G.S. Paul, 5-30. Edmonton: Faculty of Business Administration, The University of Alberta, 1974.
- Harrington, J.M. "Working long hours and health." (*British Medical Journal Supplement*) Birmingham, England: Institute of Occupational Health, 1994: 1581-2.
- Hayashi, T. et al. "Effect of overtime work on 24-hour ambulatory blood pressure." *Journal of Occupational and Environmental Medicine* 38, no. 10 (1996): 1007-11.
- Hellerstedt, W.L. and R.W. Jeffery. "The association of job strain and health behaviours in men and women." *International Journal of Epidemiology* 26, no. 3 (1997): 575-83.
- Iwasaki, K. et al. "Effect of working hours on biological functions related to cardiovascular system among salesmen in a machinery manufacturing company." *Industrial Health* 36 (1998): 361-7.
- Karasek, R.A. "Job demands, job decision latitude, and mental strain: Implications for job redesign." *Administrative Science Quarterly* 24 (1979): 285-308.
- Karasek, R.A. and T. Theorell. *Healthy work: Stress, Productivity and the Reconstruction of Working Life*. New York: Basic Books, 1990.
- Karasek, R.A., D. Baker, F. Marxer et al. "Job decision latitude, job demands, and cardiovascular disease: a prospective study of Swedish men." *American Journal of Public Health* 71, no. 7 (July 1981): 694-705.
- Lerner, D.J., S. Levine, S. Malspeis et al. "Job strain and health-related quality of life in a national sample." *American Journal of Public Health* 84, no. 10 (October 1994): 1580-5.
- Morissette R. and D. Sunter. *What is Happening to Weekly Hours Worked in Canada?* Catalogue no. 11F0019MPE. Ottawa: Statistics Canada, 1994.
- National Health and Welfare. *Canadian Guidelines for Healthy Weights*. Report of an Expert Group convened by Health Promotion Directorate, Health Services and Promotion Branch. Ottawa: National Health and Welfare, 1988.
- Nishiyama, K. and J.V. Johnson. "Karoshi—Death from overwork: Occupational health consequences of Japanese production management." *International Journal of Health Services* 27, no. 4 (1997): 625-41.
- Sease, R. and J. Scales. *Work Now—Pay Later? The Impact of Long Work Hours on Health and Family Life* (Technical Paper No. 17). Colchester, England: Institute for Social and Economic Research, 1998.
- Sheridan, M., D. Sunter and B. Diverty. "The changing workweek: Trends in weekly hours of work." *Canadian Economic Observer* (Statistics Canada, Catalogue no. 11-010-XPB) 9, no. 9 (September 1996): 3.1-3.21.
- Sokejima, S. and S. Kagamimori. "Working hours as a risk factor for acute myocardial infarction in Japan: case control study." *British Medical Journal* 317 (1998): 775-80.
- Spurgeon, A., J.M. Harrington and C.L. Cooper. "Health and safety problems associated with long working hours: a review of the current position." *Occupational and Environmental Medicine* 54 (1997): 367-75.
- Sunter D. and R. Morissette. "The hours people work." *Perspectives on Labour and Income* (Statistics Canada, Catalogue no. 75-001-XPE) 6, no. 3 (Autumn 1994): 8-13.
- Swain L., G. Catlin and M.P. Beaudet. "The National Population Health Survey—its longitudinal nature." *Health Reports* (Statistics Canada, Catalogue no. 82-003-XPB) 10, no. 4 (Spring 1999): 69-80.
- Uehata, T. "Long working hours and occupational stress-related cardiovascular attacks among middle-aged workers in Japan." *Journal of Human Ergology* 20 (1991): 147-53.
- Wilkins, K. and M.P. Beaudet. "Work stress and health." *Health Reports* (Statistics Canada, Catalogue no. 82-003-XPB) 10, no. 3 (Winter 1998): 47-62.
- World Health Organization Expert Committee. *Identification and Control of Work-related Disease* (Technical Report No. 714). Geneva: World Health Organization, 1985.

What's new?

Recent reports and studies

■ JUST RELEASED

■ *Financial performance indicators*

For the first time since 1991, large Canadian firms—those with annual revenues of more than \$75 million—experienced a decline in profitability in 1998. However, they were still more profitable than medium and smaller enterprises, continuing a trend that began after the 1991 recession.

Large firms enjoy many economic advantages. With larger-scale operations they can keep input, advertising, distribution and other operating costs down. They may also benefit from lower financing costs and be better able than smaller firms to take advantage of opportunities in foreign markets.

Statistics Canada has recently released information on the financial performance and balance sheets of Canadian businesses. These indicators were developed using the income tax returns of about one million corporations, along with data from Statistics Canada's quarterly and annual programs of financial statistics for enterprises.

Financial Performance Indicators for Canadian Business (Catalogue no. 61F0058XCB, vol. 1, \$170; Catalogue no. 61F0059XCB, vol. 2, \$190; Catalogue no. 61F0060XCB, vol. 3, \$210; Catalogue no. 10-3010XKB, vols. 1 to 3 and selected provinces/regions, \$695) is now available on CD-ROM.

For more information, or to enquire about concepts, methods or data quality, contact Ed Hamilton, Industrial Organization and Finance Division, at (613) 951-4310. To order the publication, contact Jeannine D'Angelo at (613) 951-2604, or the nearest Statistics Canada Regional Reference Centre.

■ *Implications of a greying population*

A recent collection of essays analyzes population aging and its implications for the economy and society. These essays argue that it is useful to study "cohort flow," that is, to track specific groups of individuals as they move from working age into, and through, "old age."

The book's nine chapters deal with both the demographic changes and their cultural and institutional context. One chapter analyzes the economic circumstances of older Canadians; another looks at family status and living arrangements; and others concentrate on changes that modify family ties, living arrangements, and the health and functioning of older persons. Several chapters deal explicitly with related social policies in Great Britain and Canada.

Cohort Flow and the Consequences of Population Ageing, an International Analysis and Review (Catalogue no. 89-569-XCB, \$45), a collaborative effort of Statistics Canada and university researchers, is now available on CD-ROM. Internet and print versions will be available later in 2000.

For more information, or to enquire about concepts, methods or data quality, contact Leroy Stone, Family and Community Support Systems Division, at (613) 951-9752.

■ *Article from Canadian Economic Observer*

The labour market in the 1990s

The performance of the labour market in the 1990s was significantly different from that of the 1980s, according to a feature article in the January 2000 issue of *Canadian Economic Observer*.

Following the recession of the early 1990s, firms apparently preferred to trim hiring to adjust to a weak economic recovery, rather than increase layoffs. With a low hiring rate, the participation rate in the labour force was depressed, particularly among young people. Workers created their own jobs and self-employment increased. With fewer job opportunities, rates of quitting fell in paid jobs, and labour mobility slowed—increasing job tenure among the employed. Downsizing was also higher in the 1990s.

In addition to the strong growth in self-employment, the labour market in the 1990s was marked by a continued increase in the human capital of workers, that is, in both their education and experience. For example, the proportion of the labour force with a university education increased from about 10% in 1976 to 18% in 1998.

Canadian Economic Observer (Catalogue no. 11-010-XPB, \$23/\$227) is a monthly publication. For more information, or to enquire about concepts, methods or data quality, contact Garnett Picot or Andrew Heisz, Business and Labour Market Analysis Division, at (613) 951-8214 or (613) 951-3748, respectively.

■ **Article from Services Indicators**

Innovation in the engineering services industry

This article is based on data from the 1997 *Survey of Innovation*, which was the first to look at innovation in selected knowledge-based and information-intensive service industries. It presents estimates of innovation in engineering services between 1994 and 1996.

The data show that large engineering firms are considerably more innovative than small ones. As well, firms that do not innovate are less likely to try because of the inherent risks. Product innovation is the most common of three types of innovation studied. Firms cite clients as their most important source of new ideas, while acknowledging the importance of research and development. The most significant barriers to innovation are market uncertainties and difficulties in obtaining capital.

For more information about this article, which appeared in the third-quarter 1999 issue of *Services Indicators* (Catalogue no. 63-016-XIB, \$26/\$87

or Catalogue no. 63-016-XPB, \$35/\$116), contact Daood Hamdani, Science, Innovation and Electronic Information Division, at (613) 951-3490; daood.hamdani@statcan.ca. For information about *Services Indicators*, contact Don Little, Services Division, at (613) 951-6739; littndon@statcan.ca.

■ **Demographic report, 1998-1999**

The first part of this report looks at the Canadian population at the end of the twentieth century. It also describes the most recent demographic trends (population growth, fertility, deaths, marriages, divorces, international and inter-provincial migration), placing them in an international context.

The second part of the report offers three studies on current Canadian topics. The first deals with the relationship between fertility and income among the young. The second reviews changes in life expectancy between 1986 and 1996. The third study looks at growth in the Aboriginal population since 1986.

The 1998-99 edition of the *Report on the Demographic Situation in Canada* (Catalogue no. 91-209-XPE, \$31) is now available. For more information, or to enquire about concepts, methods or data quality, contact Alain Bélanger, Demography Division, at (613) 951-2326; fax: (613) 951-2307; belaala@statcan.ca.

■ **Data guide update**

This popular reference document from the Labour and Household Surveys Analysis Division describes major Statistics Canada surveys related to labour or income. It provides survey coverage, typical uses of the data, related publications and hypothetical case studies for most sources. The guide also lists relevant contact persons, Statistics Canada Regional Reference Centres and depository libraries.

An updated version of the *Labour Market and Income Data Guide* (Catalogue no. 75F0010XIB, free) is now available in PDF format on the Statistics Canada website (www.statcan.ca). The menu path is "Concepts, definitions and methods," then "Guides and reference documents."

For more information, contact Joanne Pilon, Labour and Household Surveys Analysis Division, at (613) 951-8659; fax: (613) 951-4179; pilojoa@statcan.ca.

■ *Millennial portrait of Canada*

The latest edition of *Canada: A Portrait* paints a visual and analytical portrait of Canada's social, economic and cultural life on the eve of the new century. Drawing from Statistics Canada's rich database, the 204-page book contains a series of articles and more than 100 photographs illustrating the major trends and issues that have shaped Canadians' lives. Six perspectives are provided: the land, the people, the society, arts and leisure, the economy, and Canada's place in the world.

The 56th edition of *Canada: A Portrait* (Catalogue no. 11-403-XPE, \$47.95), which first appeared in 1927 on the occasion of Canada's 60th anniversary, is now available. For more information, contact Jonina Wood, Communications Division, at (613) 951-1114; fax: (613) 951-5116; woodjon@statcan.ca.

■ *Analytical Studies Branch research papers series*

Understanding the Innovation Process: Innovation in Dynamic Service Industries

G. Gellatly and V. Peters

Research Paper Series no. 127

This study explores key aspects of innovation in a group of service industries (communications, financial services and technical business services). It reveals high rates of innovation in these services—as high as those in many manufacturing industries.

Between 1994 and 1996, 62% of firms in financial services introduced a new or improved product, process or form of organization, as did 45% of communications firms and 43% of establishments in technical business services.

Innovation strategies in dynamic services often share a set of common characteristics, such as an emphasis on product innovation, a strong customer orientation, and a commitment to service quality. Beyond these common elements,

however, the study found that innovation strategies depended largely on the competitive pressures shaping their industries.

Data are from the 1996 Survey of Innovation. The survey included businesses in broadcasting and telecommunications industries, banks, trust companies and life insurers, and businesses in computer and related services, engineering, and other scientific and technical services. A detailed report entitled *Innovation in Dynamic Service Industries* (Catalogue no. 88-516-XPB, \$40) is also available.

For more information, or to enquire about concepts, methods or data quality, contact Guy Gellatly, Micro Economic Analysis Division, at (613) 951-3758.

Innovation, Training and Success

J. Baldwin

Research Paper Series no. 137

In recent years, growth has been fastest in industries involved in the so-called "knowledge economy." These industries produce innovative products and offer high value added per worker. While high-tech sectors are often seen to be the sources of growth, in reality innovation is far more widespread. Every industry has firms that focus on innovation.

This study finds a close relationship between innovation and a firm's success, as measured by growth, profitability or productivity. Firms that develop new processes or products, or firms that adopt new, advanced technologies, grow faster.

For more information, or to enquire about concepts, methods or data quality, contact John Baldwin, Micro Economic Analysis Division, at (613) 951-8588.

The Evolution of Pension Coverage of Young and Prime-aged Workers in Canada

R. Morissette and M. Drolet

Research Paper Series no. 138

This study, based on the Survey of Union Membership, the Labour Market Activity Survey and the Survey of Labour and Income Dynamics, examines registered pension plan (RPP) coverage of full-time employees of different ages in the private sector between the mid-1980s and the mid-1990s.

The study found lower pension coverage in industries employing lower-skilled workers. Because worker turnover is less costly in these industries than in others, some firms may have fewer incentives to use pension plans to keep employees with the company. Employment shifts toward such industries may then reduce RPP coverage.

Within industries, increases in the skill level of jobs may lead to higher pension coverage. Firms that employ highly skilled workers may have strong incentives to keep them and, consequently, may often offer a pension plan. Changes in the propensity of workers to hold higher skilled jobs (approximated by highly paid jobs) may then influence RPP coverage.

The presence of unions may increase workers' chances of being offered a pension plan, if unions negotiate both wage offers and fringe benefits. If so, a decline in union coverage could be associated with a decrease in RPP coverage.

For further information, or to enquire about concepts, methods or data quality, contact Marie Drolet or René Morissette, Business and Labour Market Analysis Division, at (613) 951-5691 or (613) 951-3608, respectively.

Differences in Innovator and Non-innovator Profiles: Small Establishments in Business Services

G. Gellatly

Research Paper Series no. 143

This report looks at business service industries and explores the strategic differences between small firms that are committed to innovation and those that are not. These industries include computer and related services, engineering, and other scientific and technical services. Four out of ten small establishments in these industries used innovative practices, such as introducing new or improved products, processes or forms of organization.

The study, based on a sample of about 2,500 small establishments from the 1996 Survey of Innovation, found two important differences between innovators and non-innovators. First, innovators placed greater emphasis on developing certain capabilities. For example, innovative firms attached more importance to financial management and the acquisition of capital. They also emphasized the recruitment of skilled labour and

compensation incentives. These distinctions indicate that among small firms in research-and-development intensive industries, competencies in financing and human resources play a critical role in the innovation process.

Second, innovators placed greater emphasis on problem solving. Successful innovation programs often arise out of a process of "learning by doing." The likelihood of encountering barriers to innovation increases as companies intensify their investments in research and development and intellectual property. The study also found that businesses that successfully developed innovations were more likely to encounter problems related to marketing, imitation of their innovations, and skill shortages.

For more information, or to enquire about concepts, methods or data quality, contact Guy Gellatly, Micro Economic Analysis Division, at (613) 951-3758.

To obtain copies of these or other studies in the Research Paper Series, contact Louise Laurin at (613) 951-4676. They are also available free on the Statistics Canada website (www.statcan.ca). The menu path is "Products and services," "Downloadable research papers (free)," then "Analytical studies."

They can be obtained, as well, through Statistics Canada Regional Reference Centres, or from the Publications Review Committee, Analytical Studies Branch, 24th floor, R.H. Coats Building, Ottawa, Ontario K1A 0T6. Or phone (613) 951-1804; fax: (613) 951-5403.

■ WHAT'S NEW IN LABOUR STATISTICS?

■ *Latest on the labour force*

The Labour Force Survey (LFS) has undergone extensive revision. A "composite estimation" method, which reduces the volatility of month-to-month changes for a number of variables, has been adopted by the survey. Furthermore, LFS estimates have been revised to reflect population counts based on the 1996 Census. These two changes have necessitated a revision of all LFS estimates back to January 1976.

The Winter 1999 issue of *Labour Force Update* (Catalogue no. 71-005-XPB, \$29/\$96), titled "An overview of the 1999 labour market," uses the revised data. Selected observations follow.

- Employment grew at a healthy pace for a third straight year in 1999, led by hiring in the manufacturing sector, particularly in the computer and electronic parts industries.
- The number of working Canadians increased by 427,000 in 1999, up 3.0% from the previous year. Overall, by December some 14.7 million people were working in Canada, 61% of the working-age population.
- With the job gains came a drop in unemployment. By the end of the year, 191,000 fewer people were searching for work, a decline of almost 15%. This drove the seasonally adjusted unemployment rate down from 8.1% at the start of the year to 6.8% in December, its lowest level since April 1976.
- Employment increased among all major age groups in 1999. The largest increase occurred among men in the core working group (aged 25 to 54), where employment rose by 134,000, up 2.3% from the year before. The employment rate for this group increased for the third year in a row.
- Almost half (46%) of the gains occurred in Ontario, where employment rose by 56,000 in manufacturing and by 198,200 (3.6%) overall. Employment increased by 93,000, or 2.8% in Quebec. By the end of the year, its unemployment rate was 8.1%, the lowest level since May 1976. In British Columbia, 55,000 (2.9%) more people were working by the end of the year. In percentage terms, Newfoundland recorded the country's fastest rate of employment growth in 1999, a 6.8% increase—more than twice the national average of 3.0%.

For more information, or to enquire about concepts, methods or data quality, contact Geoff Bowlby, Labour Force Survey, at (613)-951-3325; fax: (613) 951-3012; bowlgeo@statcan.ca, or visit "In depth" on Statistics Canada's website (www.statcan.ca).

For more information about the LFS revisions, visit www.statcan.ca/english/concepts/lfs/lfs.pdf.

The Autumn 1999 issue of *Labour Force Update*, titled "Youths and the labour market," updated information first published in the Spring 1997 edition. At that time, young people were still suffering the effects of the early 1990s recession and had yet to see any major improvement in their chances of finding work. However, the labour market for youths has improved dramatically during the last two years.

Unlike its performance after the early 1980s recession, the labour market for young people did not rebound immediately following the latest recession. Employment rates and participation rates declined steeply during most of the decade, hitting teenagers particularly hard. However, following more than a year of job growth for adults, employers began to hire young people again in 1998. This trend continued through 1999.

For additional information, contact Jeannine Usalcas, Labour Statistics Division, at (613) 951-4720; fax: (613) 951-2869; usaljea@statcan.ca, or visit "In depth" on Statistics Canada's website (www.statcan.ca).

■ *Changes to CANSIM data*

Revised LFS historical data are available on CANSIM, Statistics Canada's machine-readable database and retrieval system.

With the adoption of composite estimation, detailed seasonally adjusted data at the provincial level will be published as monthly estimates rather than three-month moving averages—using the same 10 matrices and the same D numbers.

To learn more about these changes, visit www.statcan.ca/english/CANSIM/communique.htm.

As of the January 2000 data release, *monthly* seasonally adjusted data on the key labour force characteristics for Montréal, Toronto and Vancouver are published in *Labour Force Information* (Catalogue no. 71-001-PPB, \$11/\$103). These series are also accessible through CANSIM (matrix 3503). Data for the other census metropolitan areas (CMAs) will continue to be published as three-month moving averages, including those for the above-named, to support inter-CMA comparisons. Monthly seasonally adjusted data for all CMAs will, however, continue to be available on request.

■ **New LFS data on CD**



The 1999 *Labour Force Historical Review* on CD-ROM (Catalogue no. 71F0004XCB, \$195) is now available.

It includes the new revised estimates highlighted earlier in this section. This annual product is a comprehensive database of Labour Force Survey estimates, containing thousands of cross-classified data series and spanning more than two decades. Monthly and annual average series from 1976 to 1999 are available on a wide range of subjects, including labour force status by demographic, education and family characteristics and trends in the labour markets of metropolitan areas and economic regions.

For more information, or to enquire about concepts, methods or data quality, contact Marc Lévesque, Labour Statistics Division, at (613) 951-2793; fax: (613) 951-2869; marc.levesque@statcan.ca. To order, contact the nearest Statistics Canada Regional Reference Centre.

■ **Supplementary measures of unemployment**

A new set of supplementary measures of unemployment has been developed over the last year to shed further light on the degree of labour market slack and the extent of hardship associated with joblessness. These supplementary measures were presented in the Summer 1999 issue of *Labour Force Update*. Every year, an update of the measures will be provided in the Winter issue, which gives an overview of the previous year's labour market. Also, the 1999 *Labour Force Historical Review* on CD-ROM will include provincial tables with the monthly and annual supplementary measures of unemployment.

■ **Workplace and Employee Survey**

The first findings from the inaugural Workplace and Employee Survey for the 1998 reference year will be available soon. This is a combined employer-employee survey, linking the demand and supply sides of the labour market.

The initial publication will carry results from the employer questionnaire only on selected variables, such as organizational and technological change, and business strategies. A more compre-

hensive publication, providing data from both the employer and the employee surveys, will follow, as will research articles and data products from the survey. Coincident with the release of the main publication will be the availability of a master microdata file.

For more information, contact Howard Krebs, Labour Statistics Division, at (613) 951-4063; howard.krebs@statcan.ca.

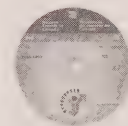
■ **Employment Insurance statistics program**

The reporting system for Employment Insurance (EI) statistics has been revised. Improvements to the estimates result from the following changes, among others: the latest geographic coding based on the 1996 Census and the latest postal code file have been incorporated; the seasonal adjustment process has been improved; adjustments to preliminary data are no longer necessary; percentage changes are computed with rounded data; the number of beneficiaries in the new Northwest Territories and Nunavut is available from March 1999; reimbursements to the EI program are incorporated in the "total benefits paid" series; and transfers to provinces are published separately.

For further information regarding these improvements, contact the Labour Statistics Division's enquiries number at (613) 951-4090.

■ **WHAT'S NEW IN INCOME STATISTICS?**

■ **Income trends**



Income Trends in Canada (Catalogue no. 13F0022XCB, \$195) is a new CD-ROM of income statistics, covering topics such as income distributions, income tax, government transfers, and low income. Estimates are from the Survey of Consumer Finances (SCF) and cover 1980 to 1997. For 1998 onward, the Survey of Labour and Income Dynamics will replace the SCF and will be added to future editions of this product, which replaces *Income Historical Review, 1980-1996*.

Six new tables have been added to the previous forty-two. Most now include estimates for all provinces and for 15 census metropolitan areas.

Four of the new tables present estimates of market income, that is, earnings plus investment income and income from retirement pensions. The other two display information on government transfers and income taxes paid. These tables provide averages, rates and shares of the total by after-tax income quintile. All tables provide estimates for various subgroups of the population.

For more information on this CD-ROM, see the research paper titled *Income Trends in Canada 1980-1997, User's Guide* on Statistics Canada's website (www.statcan.ca). The menu path is "Products and services," then "Downloadable research papers (free)," followed by "Income, expenditures, pensions, assets and debts" and "Income."

■ *Low income cutoffs*

Before-tax low income cutoffs (LICOs) for 1998 are now available. Each year, the LICOs are updated to reflect cost-of-living increases, based on the annual change in the Consumer Price Index.

Cutoffs are presented in the latest edition of *Low Income Cutoffs* (Catalogue no. 13-551-XIB, free) for 1980 to 1998. Both the 1992-base and 1986-base LICOs are included.

Although LICOs are often referred to as poverty lines, they have no official status as such, and Statistics Canada does not recommend their use for this purpose. For more information, refer to "On poverty and low income," available on Statistics Canada's website (www.statcan.ca) under "Concepts, definitions and methods," followed by "Discussion papers or new surveys," then "Feature article on poverty and low income."

■ *Research papers*

Should the Low Income Cutoffs be Updated? A Discussion Paper

Statistics Canada has been examining options for updating its low income cutoffs (LICOs). This report describes the issues and findings, and proposes a course of action.

Statistics Canada has produced information on low income since the 1960s. Currently, the Agency uses LICOs based on 1992 family expenditure data. Every year, these LICOs are updated for inflation using the Consumer Price Index. However, no recent changes in spending patterns are reflected in the LICOs, or in the associated low income rates.

A Comparison of the Results of the Survey of Labour and Income Dynamics (SLID) and the Survey of Consumer Finances (SCF), 1993-1997: Update

Statistics Canada's family income data have been based on the Survey of Consumer Finances for many years. In 1995, planning began to replace the SCF with the Survey of Labour and Income Dynamics, a new longitudinal survey with similar income content and much more detailed labour content. SLID, which has been collecting longitudinal labour market and income data since 1993, is also capable of producing annual cross-sectional data.

This report presents results from the two sources for a number of time series. As well, a selection of tables on income dynamics from SLID showcases the new longitudinal information available.

Bridging Two Surveys: An Integrated Series of Income Data From SCF and SLID, 1989-1997

SLID replaces SCF as of the 1998 reference year, after an overlap period of five years. Aside from efficiency gains, SLID adds a large selection of demographic, family and labour market variables.

This paper presents several of the most important income series, such as total income, income before and after tax, and low income rates before and after tax, based on low income cutoffs.

These integrated series provide data users with a preview of the information that will be published beginning with the 1998 reference year. Thus, when the 1997-to-1998 changes are published in 2000, estimates from both years will be based on SLID.

The Persistent Gap: New Evidence on the Canadian Gender Wage Gap

This study sheds new light on the female-to-male pay gap using data from the Survey of Labour and Income Dynamics. It investigates the extent to which factors such as work experience, supervisory responsibilities and involvement in administrative decisions account for wage differences between men and women. This study does not consider why differences exist in the work status of men and women; rather, it focuses on how these differences are associated with the wage gap.

Earnings ratios have previously been calculated with numbers from the Survey of Consumer Finances based on annual earnings for full-year, full-time workers including the self-employed.

The present study is based on hourly earnings data, which eliminate the effect of the difference between men's and women's hours worked annually, and provide a more accurate picture of pay differentials due to other factors.

A similar study based on hourly earnings data from the Labour Force Survey was released December 1, 1999. See "Women's earnings/men's earnings" in the Winter 1999 edition of *Perspectives*.

The above reports are available free on Statistics Canada's website (www.statcan.ca). The menu path is "Products and services," then "Downloadable research papers (free)," followed by "Income, expenditures, pensions, assets and debts" and "Income."

For more information, or to enquire about concepts, methods or data quality, contact Client Services, Income Statistics Division, at (613) 951-7355 or 1 888 297-7355; fax: (613) 951-3012; income@statcan.ca.

■ **Retirement income programs**

This document provides an inventory of the surveys, databases, publications, articles and works in progress at Statistics Canada that relate to Canada's retirement income programs. Some of the information provides background for research and analysis in this area. For example, the Labour Force Survey furnishes the number of paid workers in Canada, which is required to calculate the proportion of the workforce covered by certain programs.

Retirement Income Programs: An Inventory of Data/Information Available at Statistics Canada (Catalogue no. 13F0026MIE00001) was compiled by the Pensions and Wealth Surveys Section of the Income Statistics Division. It is available free on Statistics Canada's website (www.statcan.ca). The menu path is "Products and services," then "Downloadable research papers (free)," followed by "Income, expenditures, pensions, assets and debts" and "Assets and debts."

For more information, contact Client Services, Income Statistics Division, at (613) 951-7355 or 1 888 297-7355; fax: (613) 951-3012; income@statcan.ca.

■ **Pension plans**

Pension Plans in Canada is based on a census of all employer-sponsored registered pension plans (RPPs) in the country and looks at changes over the period 1987 to 1997. It provides information on the terms and conditions of RPPs, as well as on the membership and contributions made by and on behalf of members. Some information is also given on other programs set up to provide income at retirement. These include registered retirement savings plans (RRSPs), Canada and Quebec Pension Plans, and Old Age Security/Guaranteed Income Supplement.

The statistics in this report are derived largely from administrative data from the 10 pension supervisory authorities (9 provincial, one federal). A table with data on the labour force and paid workers covered by an RPP is available in the "Canadian statistics" module on Statistics Canada's website (www.statcan.ca).

The publication, *Pension Plans in Canada, January 1, 1998* (Catalogue no. 74-401-XIB, \$31) is now available. To obtain statistical tables, custom tabulations or further information, contact Client Services, Income Statistics Division, at (613) 951-7355 or 1 888 297-7355; fax: (613) 951-3012; income@statcan.ca.

■ **Homeowner repair and renovation**

Homeowners spent an average of \$1,670 repairing or renovating their homes in 1998, basically unchanged from 1997 and still well below the peak of \$2,710 in 1989. In 1998, average spending on work contracted out was \$1,070. However,

the average remained below the 1989 peak of \$1,820. In total, homeowners spent \$12.8 billion on repairs and renovations in 1998. About 67% of the nation's 7.6 million homeowners made repairs or renovations to their buildings in 1998. Of these 7.6 million homeowners, 9% spent \$5,000 or more. Still, for many homeowners, expenditures were modest (about 24% spent less than \$500).

Data from the 1998 Homeowner Repair and Renovation Survey were collected in March 1999 from a sample of about 20,000 homeowners. To ease historical comparisons, data from previous years have been adjusted to reflect price changes in the construction field. Only summary level expenditures from previous years have been adjusted.

Summary data from the survey are available free on Statistics Canada's website (www.statcan.ca). The menu path is "Canadian statistics," "The people," "Families, households and housing," and "Expenditures." Tables presenting detailed repair and renovation data for Canada and the provinces (Catalogue no. 62F0061XDB, \$35 or Catalogue no. 62F0061XPB, \$50) are also available, as are custom tabulations.

Homeowner Repair and Renovation Expenditure in Canada, 1998 (Catalogue no. 62-201-XIB, \$23 or Catalogue no. 62-201-XPB, \$31) is now available. For further information or to enquire about concepts, methods or data quality, contact Client Services, Income Statistics Division, at (613) 951-7355 or 1 888 297-7355; fax: (613) 951-3012; income@statcan.ca.

■ *Household spending, 1998*

In 1997, the Survey of Household Spending replaced the Family Expenditure Survey (last conducted in 1996) and the Household Facilities and Equipment Survey (last conducted in 1997). (See also "Key labour and income facts" in this issue.)

Summary data for 1998 household spending, as well as dwelling characteristics and household equipment, are available free on Statistics Canada's website (www.statcan.ca). The menu path is "Canadian statistics," "The people," "Families, households and housing," and "Expenditures."

Tables presenting detailed spending are now available for Canada, the provinces and territories, and selected metropolitan areas. Custom tabulations can also be obtained. *Spending Patterns in Canada, 1998* (Catalogue no. 62-202-XIB, \$34 or Catalogue no. 62-202-XPB, \$45) will be released in June 2000.

For more information about the Survey of Household Spending, or to enquire about concepts, methods or data quality, contact Client Services, Income Statistics Division, at (613) 951-7355 or 1 888 297-7355; fax: (613) 951-3012; income@statcan.ca.

■ UPCOMING CONFERENCES

■ *Statistics Canada, Economic Conference 2000: Expanding Horizons: Canada in an International Context* May 15-16, 2000, Ottawa

Statistics Canada's annual economic conference, to be held at the Ottawa Congress Centre, provides a forum for the exchange of empirical research by business, government, research centres and labour. Guest speakers will address plenary sessions, comparing Canadian situations with those of other countries and speaking on issues arising from international flows of all kinds.

For further information, contact Jocelyne Lepage, Conference Co-ordinator, at (613) 951-1135; fax: (613) 951-4179; lepajoc@statcan.ca; or visit our website at www.statcan.ca/english/conferences/economic2000.

■ *International Conference on Establishment Surveys—II* June 17-21, 2000 Buffalo, New York

The first International Conference on Establishment Surveys (ICES) was held in Buffalo, New York in 1993, and convened more than 400 experts in business, agriculture and institution surveys. The monograph papers from this conference were published by J. Wiley in 1995 in *Business Survey Methods*, edited by B. Cox et al.

A second conference, ICES-II, to be held at the Adam's Mark Hotel in Buffalo, is planned for June 2000. Since the first ICES, many new techniques have been implemented by practitioners around the globe. The first conference set the stage by formally documenting the state of the art at that time. The second meeting will provide an opportunity to look at methods for surveying businesses, farms and institutions.

For details about the sessions, workshops and demonstrations, visit the conference website at www.eia.doe.gov/ices2/index.html.

■ ***Canadian Rural Restructuring
Foundation and Statistics Canada
The New Rural Economy: Options and
Choices
October 11-14, 2000
Alfred, Ontario***

The 12th annual Rural Policy Conference of the Canadian Rural Restructuring Foundation, organized in co-operation with Statistics Canada, will be held in Alfred, Ontario in October 2000.

Through round-table discussions, workshops, presentations and site visits, the conference will address four main themes: the effect of municipal restructuring on the development of rural regions; the importance of agriculture in the rural economy; demographic trends in rural areas; and the structure of employment in rural areas.

For more information, contact Brian Bender, Conference Co-ordinator, St-Paul Street, P.O. Box 580, Alfred, Ontario, K0B 1A0; (613) 679-2218 (Ext. 207); fax: (613) 679-2415; bbender@alfredc.uoguelph.ca or Ray D. Bollman, Program chair, Agriculture Division at (613) 951-3747; fax: (613) 951-3868; bollman@statcan.ca.

Perspectives

Key labour and income facts

Selected charts and analysis

This section regularly highlights statistics and analyses from a number of different sources. However, it has been many years since it has presented information covering the entire spectrum of labour and income surveys. Thus, for *Perspectives'* first issue of 2000, this section features an overview of the surveys providing the data for monitoring economic conditions in Canada.

For each data source a brief description of the relevant survey is included, along with illustrative charts and analysis. Also noted are the frequency of the survey and a contact person or service. Much of the information has been adapted from articles in *The Daily*, Statistics Canada's major dissemination tool for new data and information. Other statistics and analyses have been adapted from information provided by subject-matter divisions and/or other publications of Statistics Canada.

Over the years, Statistics Canada (often in partnership with other federal government departments) has launched a number of new surveys related to labour and income; for example, the Survey of Labour and Income Dynamics (SLID). Other surveys have undergone major revisions—the Labour Force Survey (LFS) and the Census of Population, to name two—while some have been replaced (for example, the Household Facilities and Equipment Survey and the Family Expenditure Survey by the Survey of Household Spending [SHS]).

For these reasons, users are cautioned when making comparisons of data from one year to the next. They are also encouraged to contact the relevant resource person or service for any required clarification. For general inquiries related to the following charts and analysis, contact Bruce Rogers at (613) 951-2883; bruce.rogers@statcan.ca or Joanne Bourdeau at (613) 951-4722; joanne.bourdeau@statcan.ca; fax: (613) 951-4179.

Administrative data

Small area and administrative data

Frequency: Annual
Contact: Customer Services
(613) 951-9720

Business surveys

Annual Survey of Manufactures

Frequency: Annual
Contact: Richard Vincent
(613) 951-4070

Business Conditions Survey of Manufacturing Industries

Frequency: Quarterly
Contact: Claude Robillard
(613) 951-3507

Census

Census labour force characteristics

Frequency: Quinquennial
Contact: Michel Côté
(613) 951-6896

Census income statistics

Frequency: Quinquennial
Contact: Abdul Rashid
(613) 951-6897

Employment and income surveys

Labour Force Survey

Frequency: Monthly
Contact: Marc Lévesque
(613) 951-2793

Survey of Employment, Payrolls and Hours

Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

Help-wanted Index

Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

Employment Insurance Statistics Program

Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

Major wage settlements

Bureau of Labour Information
(Human Resources Development Canada)
Frequency: Quarterly
Contact: (819) 997-3117
1 800 567-6866

Labour income

Frequency: Quarterly
Contact: Anna MacDonald
(613) 951-3784

Survey of Labour and Income Dynamics

Frequency: Annual
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

Survey of Consumer Finances

Frequency: Annual
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

Survey of Household Spending (replaces Household Facilities and Equipment Survey and Family Expenditure Survey)

Frequency: Annual
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

General Social Survey

Education, work and retirement

Frequency: Occasional
Contact: Client Services
(613) 951-5979

Social and community support

Frequency: Occasional
Contact: Client Services
(613) 951-5979

Time use

Frequency: Occasional
Contact: Client Services
(613) 951-5979

Pension surveys

Pension Plans in Canada Survey

Frequency: Annual
Contact: Thomas Dufour
(613) 951-2088

Quarterly Survey of Trusteed Pension Funds

Frequency: Quarterly
Contact: Bob Anderson
(613) 951-4034

Special surveys

Survey of Work Arrangements

Frequency: Occasional
Contact: Ernest B. Akyeampong
(613) 951-4624

Adult Education and Training Survey

Frequency: Occasional
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

Graduate Surveys

(Postsecondary)
Frequency: Occasional
Contact: Bill Magnus
(613) 951-4577

Small Area and Administrative Data (SAAD)

The Small Area and Administrative Data Division produces a wealth of economic and demographic information on Canadian taxfilers and their dependants. The data are derived primarily from Revenue Canada's annual taxfile. This file is the basis for 14 standard products based on both postal

code and census geographic coding. Data on individuals, families and seniors are also available—cross-sectionally or longitudinally. Frequency: annual. Contact: Customer Services (613) 951-9720, saadinfo@statcan.ca.

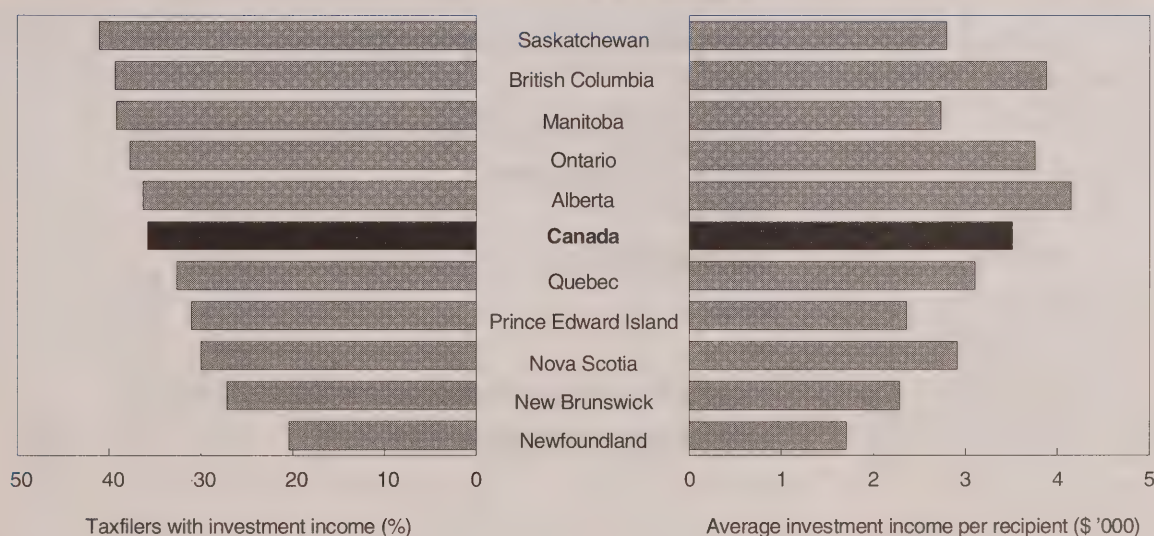
The number of Canadians who reported investment income in 1998, and the value of the income received, remained virtually unchanged from 1997. The number of investment income recipients declined by less than half a percent (-0.4%) to 7.5 million and the reported total was \$26.2 billion, up only 0.1% from 1997.

Consistent with the trend in previous years, the number of savers declined again in 1998, from 5.2 million in 1997 to just under 5.0 million, a 4.6% drop. Interest income also declined in 1998, by almost \$1 billion, an 11.2% drop.

Throughout the decade, the number of investors (those deriving dividend income) continually increased. In 1998, the number of dividend recipients rose more than 200,000 to 2.5 million, an increase of 9.0%. The value of their investment dollars, including interest they may have received, increased 6.5% to \$17.8 billion.

Of all taxfilers in Canada in 1998, 36% reported either interest or dividends. Saskatchewan had the highest percentage of investment income recipients relative to total taxfilers in the province (41%), followed by both British Columbia and Manitoba at 39%.

Investment income, 1998



Source: Small Area and Administrative Data Division

Annual Survey of Manufactures

The Annual Survey of Manufactures collects information for about 35,000 manufacturing establishments grouped into 236 industries. The principal statistics are shipments, materials purchased, inventories, labour data, non-manufacturing activity, and commodity information. The

data provide measures of production in the industrial sector of Canada, giving an indication of the well-being of each industry and its contribution to the Canadian economy. Frequency: annual. Contact: Richard Vincent (613) 951-4070, manufact@statcan.ca.

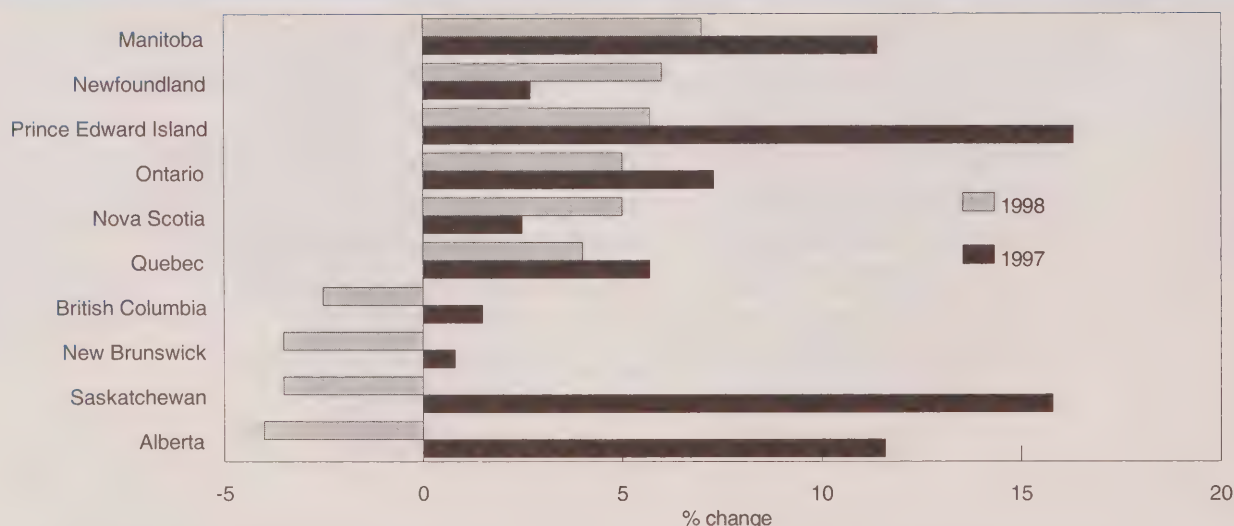
All provinces posted increases in shipments in 1997. Canada's regional economic disparity resulted in considerable provincial variation in performance. In 1997, the biggest percentage increases were recorded in Prince Edward Island (16%), Saskatchewan (16%), Alberta (12%) and Manitoba (11%). Ontario and Quebec recorded more modest increases, contributing 57% and 20% shares, respectively, of the \$27.5 billion increase in manufacturing shipments posted in 1997.

Following a substantial drop in 1996, British Columbia posted a slight increase in 1997.

That province is slowly recovering from slack manufacturing activity, owing largely to the collapse of the Asia-Pacific economies that began in the summer of 1997. The crisis resulted in reduced demand for primary materials, which put downward pressure on prices. (British Columbia's manufacturing activity focuses on primary products [paper and wood], most of which are exported.)

The year 1998 was no more encouraging for the province, with a decline in shipments of about 3%.

Change in manufacturing shipments by province, 1997 and 1998



Sources: Annual Survey of Manufactures; Monthly Survey of Manufactures (1998)

Census of Population, labour data

The Census of Population provides demographic, social, economic and cultural information on the Canadian population (individuals, families, households and dwellings). Labour market data include, for example,

occupation, industry, class of worker, place of work, weeks worked, hours worked, unpaid work and labour market activities. Frequency: quinquennial. Contact: Michel Côté (613) 951-6896, michel.cote@statcan.ca.

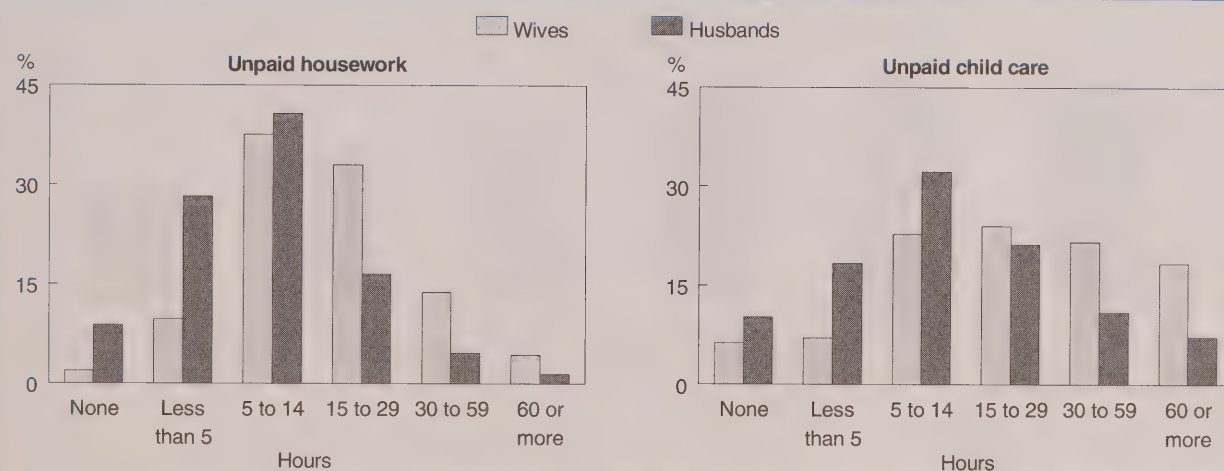
Among private households in Canada, 92% of women reported doing unpaid housework or home maintenance in the week preceding the census, compared with 85% of men.

Among wives who worked full time (30 or more hours) for pay in the week prior to the census, 51% reported spending 15 or more hours doing unpaid housework. In contrast, among wives with no paid employment, 70% did 15 or more hours of housework. Among husbands with full-time employment, 23% spent at least 15 hours doing housework; for those with no paid employment, the proportion was 36%.

People with full-time paid jobs had less time to spend with their children: about 64% of wives with full-time paid jobs spent 15 hours or more looking after their children in the week prior to the census. This was the case for 79% of wives who did not have a full-time paid job.

About 18% of wives with a full-time paid job said they spent 60 hours or more caring for children. The figure was more than double (46%) among wives who did not have a full-time paid job. The situation was similar for men. About 42% of husbands who did not have paid work spent 15 hours or more on child care, compared with 39% of those who had a full-time job.

Time spent on unpaid housework and on unpaid child care, by spouses with full-time jobs



Source: Census of Canada, 1996

Census of Population, income data

The Census of Population provides demographic, social, economic and cultural information on the Canadian population (individuals, families, households and dwellings). Income data include, for example, employment

income, government transfer payments, other money income and total income. Frequency: quinquennial. Contact: Abdul Rashid (613) 951-6897, abdul.rashid@statcan.ca.

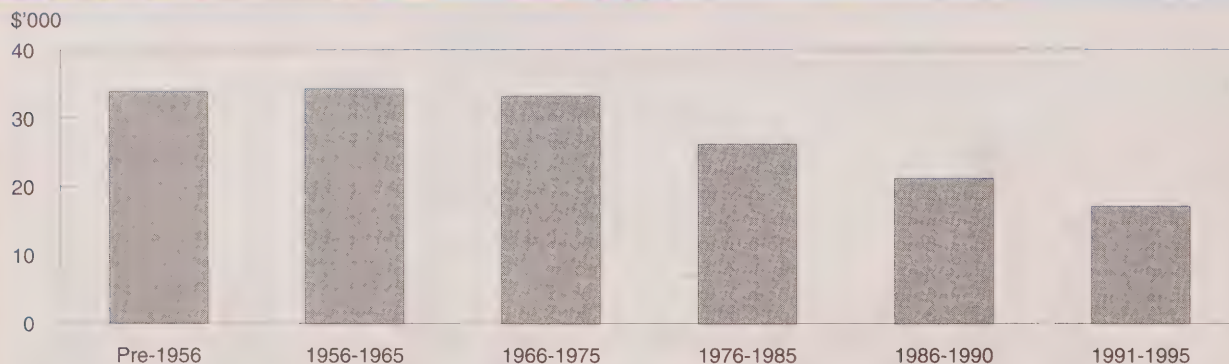
In 1995, over 2.8 million earners were immigrants, accounting for 19% of all people with employment income. Their earnings varied significantly by their period of immigration to Canada. About 21% of them immigrated before 1966. Another 28% came between 1966 and 1975.

Average earnings in 1995 of both these groups were more than 30% above those of non-immigrants. In contrast, the average for immigrants who arrived between 1976 and 1985 was just 1% higher. In addition to many other factors, experience in the Canadian labour market is clearly a substantial benefit to earlier groups of immigrants.

More recent immigrants had significantly lower earnings. People who arrived between 1986 and 1990 earned \$21,500, or 18% less than that of non-immigrants. The average employment income of people who came after 1990 was \$16,700, or 36% less than the average earnings of non-immigrants.

In spite of the wide range in average earnings by period of immigration, the much greater representation of pre-1976 arrivals pushed overall average earnings of immigrants to \$27,700. This was 6% higher than earnings of non-immigrants (\$26,200).

Average 1995 earnings of immigrants, by period of arrival



Source: Census of Canada

Labour Force Survey (LFS)

The LFS is a household survey of a sample of over 50,000 households representative of the civilian, non-institutionalized population 15 years or older in the 10 provinces. It collects data on the labour market activities and demographic characteristics of the working-age

population of Canada and provides estimates of the number and characteristics of the employed, the unemployed, and persons not in the labour force. Frequency: monthly. Contact: Marc Lévesque (613) 951-2793, marc.levesque@statcan.ca.

Job growth in 1999 was driven by an increase in the number of employees. In the private sector, growth was an estimated 27,000 in December. After a drop in the first half of the year, gains were made for six months in a row, leaving the number of private sector employees 1.8% higher than in December 1998.

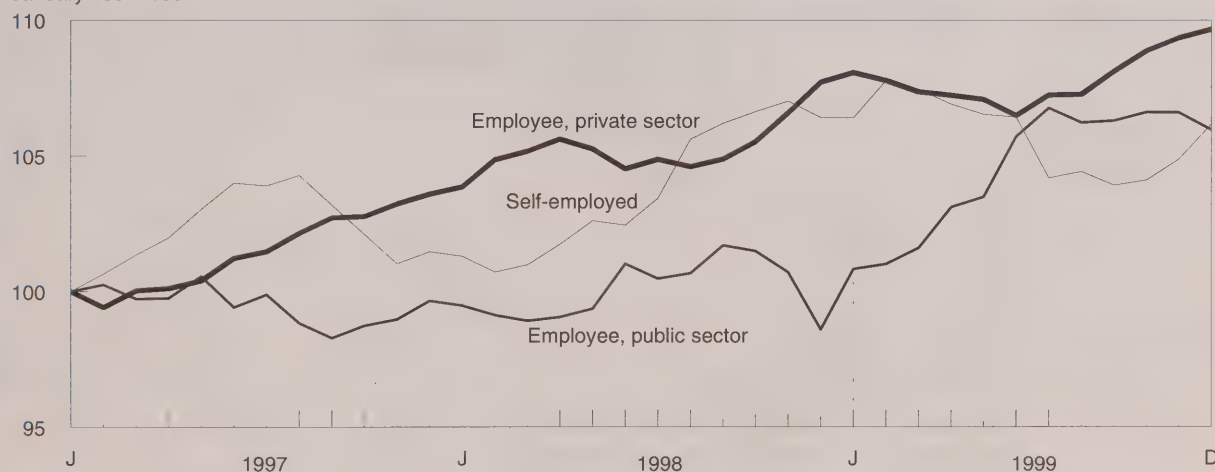
The number of employees in the public sector fell by over 16,000 in December 1999. However, because job gains were strong at the start of the year (owing to

hiring in hospitals and schools), public sector employment was 7.5% higher than at the end of 1998. The total number of employees was up 361,000 (3.0%) over 1998.

Self-employment rose by 32,000 in December 1999, the second consecutive monthly increase. This followed losses earlier in the year and left the number of self-employed people at about the same level as in December 1998.

Employment by sector and class of worker

January 1997=100



Source: Labour Force Survey, seasonally adjusted data

Help-wanted Index

The Help-wanted Index is compiled from the number of help-wanted advertisements published in 22 newspapers in 20 major metropolitan areas. As a measure of companies'

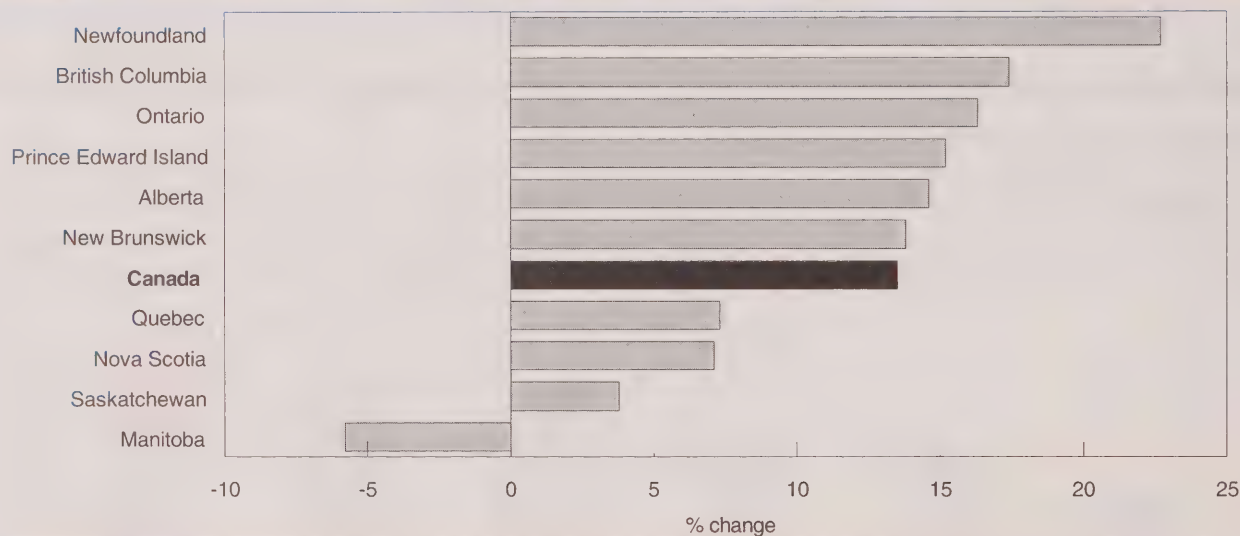
intentions to hire new workers, it serves as an early indicator of labour market conditions. Frequency: monthly. Contact: Sylvie Picard (613) 951-4090, labour@statcan.ca.

The Help-wanted Index (1996=100) increased 2.4% to 168 in January 2000, continuing a three-year upward trend. The national index was 13.5% higher in January than during the same period a year earlier.

The index increased in all provinces but Prince Edward Island and Nova Scotia. In British Columbia, the index has been increasing since mid-1999, and in

January the province registered its strongest growth (4.4%). After several months of decline or no growth, Alberta and Saskatchewan recorded their fifth consecutive monthly increases. At the same time, Manitoba's index increased for the first time in six months.

Help-wanted Index, January 1999 to January 2000



Source: Help-wanted Index, seasonally adjusted data

Employment Insurance statistics

Statistics Canada compiles Employment Insurance (EI) statistics prepared from administrative data obtained from Human Resources Development Canada (HRDC). All persons contributing EI premiums (insured population),

as well as those who are claiming (claimants) or receiving (beneficiaries) benefits, are included. Frequency: monthly. Contact: Sylvie Picard (613) 951-4090, labour@statcan.ca.

An estimated 501,200 Canadians received regular Employment Insurance (EI) benefits in November 1999, down 2.8% from October—the third consecutive decline. This contrasted with the relative stability earlier in the year.

Compared with a year earlier, the number of beneficiaries receiving regular benefits was down 7.9%. Newfoundland was the only province to show an increase from November 1998.

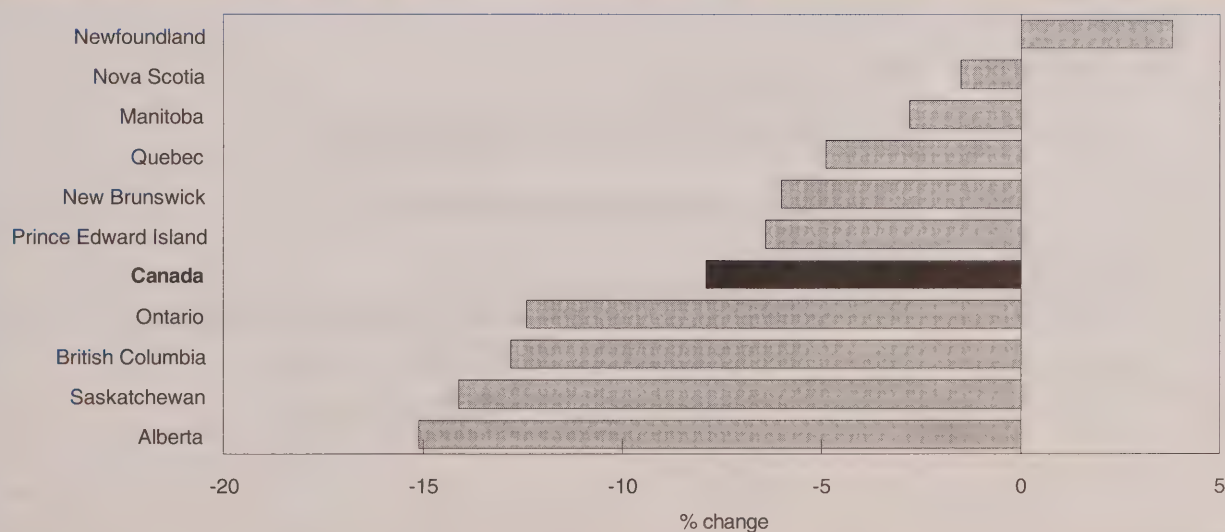
Regular benefit payments decreased 9.9% in November to \$600.6 million, while claims received decreased 6.9% to 205,400.

A new production system and methodology were introduced starting with October 1999 data. Changes include the use of geographic coding from the 1996

Census and the latest postal code file, the inclusion of reimbursements to the EI program for more accurate data on total benefits paid, revised seasonal factors, and raw data from March 1999 for the number of beneficiaries for the new Northwest Territories and Nunavut. As well, transfers to provinces are now published separately. (See also *What's new?* in this issue.)

The number of beneficiaries is a measure of all persons who received EI benefits for the week including the 15th of the month (to correspond with the LFS reference week). The regular benefit payments series measures the total of all monies received by individuals for the entire month. These different reference periods must be considered when comparisons are made between series.

Regular EI beneficiaries, November 1998 to November 1999



Source: Employment Insurance statistics, seasonally adjusted data

Survey of Labour and Income Dynamics (SLID)

The Survey of Labour and Income Dynamics (SLID) is a longitudinal household survey that began in January 1993. Respondents enter the survey and remain for six years, completing two detailed questionnaires each year, one on labour market activity and the other on income. The same

people are interviewed in successive years to capture transitions in the nation's labour market and other changes experienced by individuals and families. Frequency: annual. Contact: Client Services (613) 951-7355 or 1 888 297-7355, income@statcan.ca.

Up to 20% of Canadians reported low income for at least one year between 1993 and 1996. Furthermore, 5% had income below Statistics Canada's low income cut-offs for all four years.

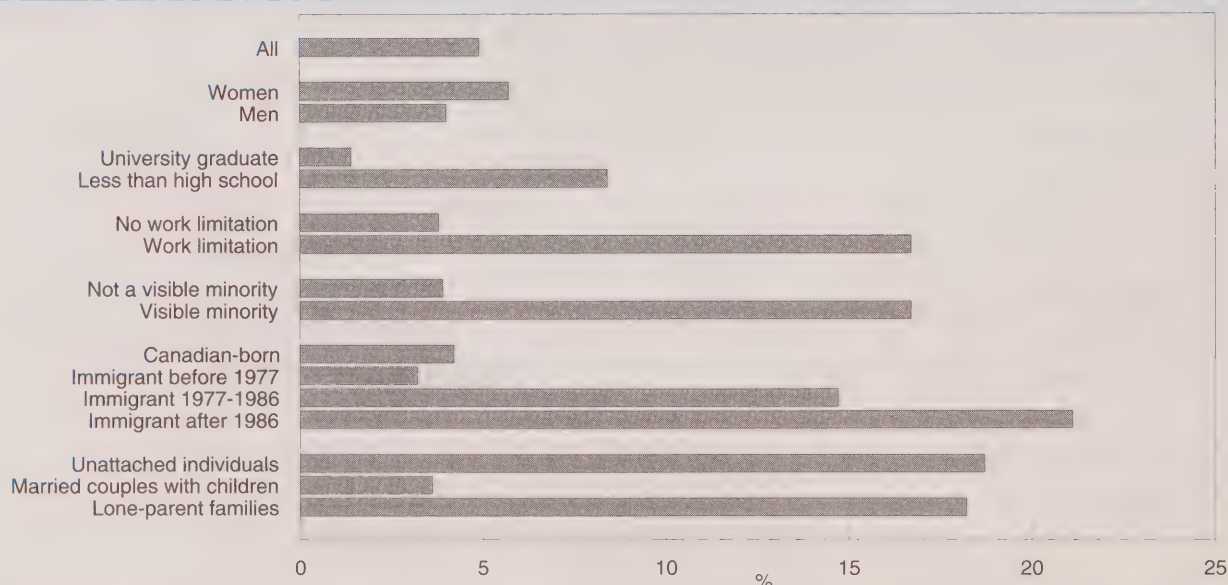
People with work limitations had a relatively high chance of fitting this category. Fully 40% of them were in low income for at least one year between 1993 and 1996 and 17%, for all four years. In contrast, only 18% of persons with no work limitations were in a low income situation for at least one year, and only 4% for all four years.

The risk of low income was also pronounced for people in lone-parent families. Almost half of them

had low income for one year or more, and 18% experienced low income continuously. In contrast, 13% of individuals living in families composed of married couples with children were in low income for at least one year, and only 4% had low income on a continuous basis.

Individuals living in families in which the major income earner was a university graduate were generally insulated from low income. This was true for fully 95% of them between 1993 and 1996, compared with 79% of members of families whose major income earner had not completed high school.

Canadians* in low income for four consecutive years, 1993-1996



Source: Survey of Labour and Income Dynamics

* Persons 16 and over.

Survey of Consumer Finances (SCF)

The Survey of Consumer Finances (SCF), a supplement to the April Labour Force Survey (LFS), collects data on the income of individuals, families and households and provides statistics on income distributions, earnings of men and women, dual-earner families and low income rates. Starting with 1998 income statistics, the Survey of Labour and

Income Dynamics (SLID) will be used to produce annual cross-sectional income estimates, in addition to longitudinal labour and income data. Frequency: annual. Contact: Client Services (613) 951-7355 or 1 888 297-7355, income@statcan.ca.

The pre-transfer income gap between high and low income families grew significantly during the two most recent economic downturns. Lower income families were hit hardest by declining earnings from job losses during the recessions of the early 1980s and 1990s. Between 1980 and 1984, families in the lowest quintile experienced a 22% drop in pre-transfer income while those in the highest saw a decline of only 3%. Between 1989 and 1993, the decreases were 27% and 6%, respectively.

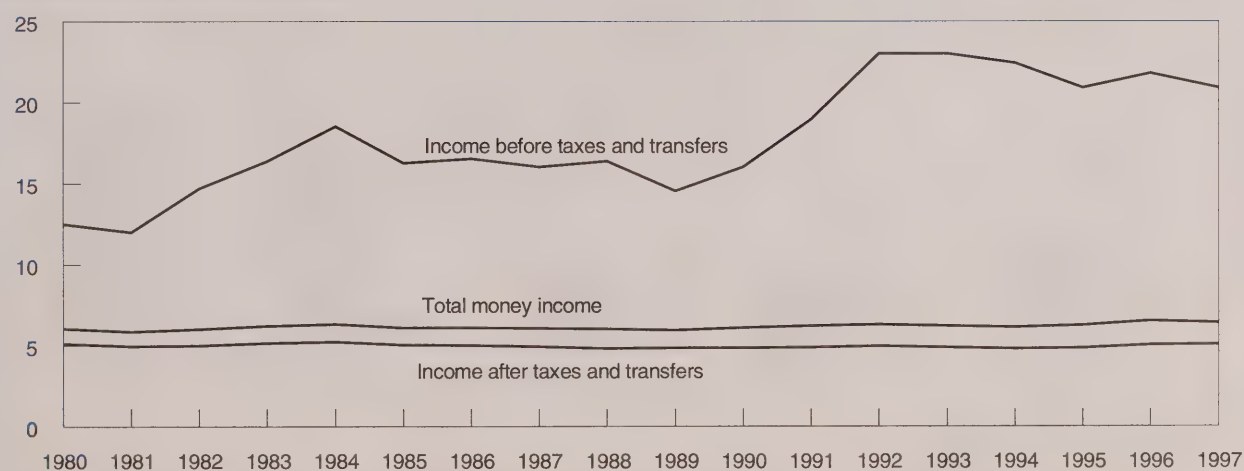
During both recoveries, the pre-transfer gap narrowed, as families in the lowest quintile recorded the largest percentage increase in earnings from

employment. Between 1984 and 1989, families in the lowest quintile saw their pre-transfer income rise 32%, while those in the highest experienced an 11% gain. From 1993 to 1997, gains were a more modest 10% and 3%, respectively.

On the basis of after-tax income, the picture is quite different. After-tax income inequality remained stable, owing to the combined effect of transfers and taxes.

Ratio of average family income, highest to lowest quintile, 1980-1997

Income ratio: highest to lowest quintile



Source: Survey of Consumer Finances

Survey of Household Spending (SHS)

The Survey of Household Spending merges the Family Expenditure Survey (FAMEX) and the Household Facilities and Equipment Survey (HFE). It obtains estimates of the expenditures, income, household facilities and equipment, and other characteristics of families and individuals living in private households in Canada. Housing characteristics such

as the number of bedrooms, the type of heating equipment and fuel, and the presence of equipment such as computers, modems, and cellular phones can now be studied with spending patterns of different household types. Frequency: annual. Contact: Client Services (613) 951-7355 or 1 888 297-7355, income@statcan.ca.

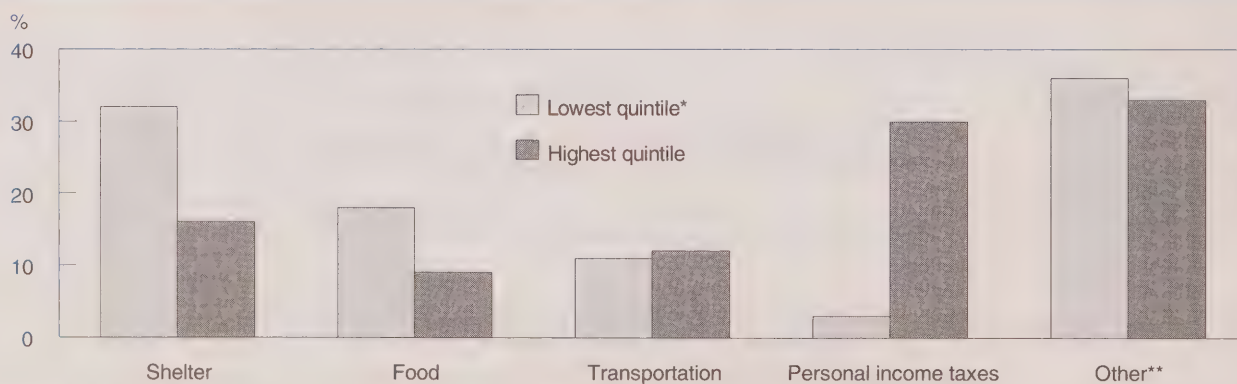
Personal taxes claimed just over 21% of the average household's budget in 1998, while shelter costs claimed about 20%. Transportation and food each took up just over 10%. These proportions were virtually unchanged from 1997.

In 1998, the one-fifth of households with the lowest incomes spent an average \$16,900, compared with \$101,800 for the one-fifth of households with the highest incomes. After adjusting for differences in household size, total expenditure per person was \$10,600 for the lowest income households and \$30,200 for the highest income households.

Average household spending on food was \$1,900 (adjusted for household size) for the lowest income households and \$2,700 for the highest. Spending on shelter was \$3,400 (adjusted for household size) for the former and \$4,800 for the latter.

In the households with the lowest incomes, food and shelter accounted for half of all spending. In contrast, the households with the highest incomes devoted only one-quarter to these two basic categories, but approximately one-third to personal income taxes. Income taxes claimed only 3% of the budget for those with the lowest incomes.

Percentage of household budget by major spending category



Source: Survey of Household Spending, 1998

* The upper bound for the lowest quintile is \$20,530.

** "Other" comprises 12 spending categories, the largest of which (recreation) is less than 10% of the total budget for both quintiles.

General Social Survey on Education, Work and Retirement

Cycle 9 of the General Social Survey (GSS), conducted in 1994, collected data on education, work and retirement and focused on the transition into retirement and post-retirement activities. Data were collected from approximately 11,500

respondents over a 12-month period from January 1994 to December 1994 using a computer-assisted telephone interview system. Frequency: occasional. Contact: Client Services (613) 951-5979, hfsslf@statcan.ca

A comparison of the retirement ages of men and women shows that women tend to retire much earlier than their male counterparts. In 1994, the average retirement age for women was 58, compared with 62 for men. Thus, some 44% of women retired before the age of 60, compared with 31% of men.

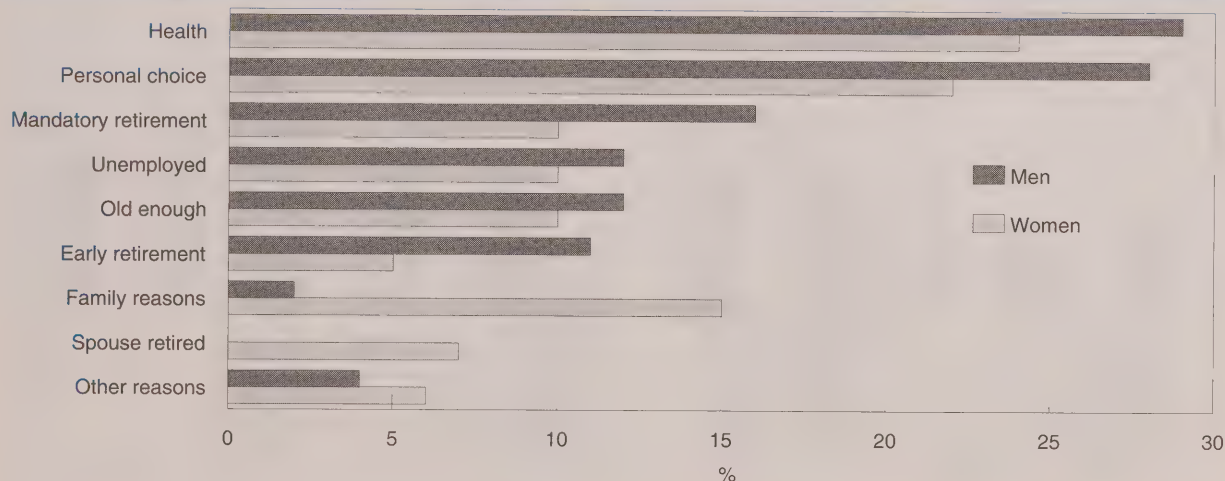
In 1994, more than one-quarter of retirees reported that they had retired for health reasons. The same proportion stated that they had retired by choice.

People who retire before age 60 do so mainly for reasons associated with their health or family circumstances or because they can take advantage of

early retirement incentives. More than 40% of retirees who said they had retired for health reasons retired before age 60, as did 70% of those who retired for family reasons.

Family circumstances influence women more than men in their decision to retire. Nearly 15% of women, compared with 2% of men, cited family reasons as their motivation for retiring. As well, 7% of women took their retirement because their spouse was retired, whereas the percentage of men doing so was negligible.

Reasons for retiring



Source: General Social Survey, 1994

General Social Survey on Time Use

Cycle 12 of the General Social Survey (GSS) examined the time use of Canadians in 1998. This survey was previously conducted in 1992 and 1986. Data were collected from approximately 10,000 respondents over a 12-month period from February 1998 to January 1999 using a computer-assisted telephone interview system. The GSS asked

respondents to keep a diary of their time use over a 24-hour period. This diary provided information on how Canadians allocated their time for work, both paid and unpaid, as well as personal and leisure activities. Frequency: occasional. Contact: Client Services (613) 951-5979, hfsslf@statcan.ca.

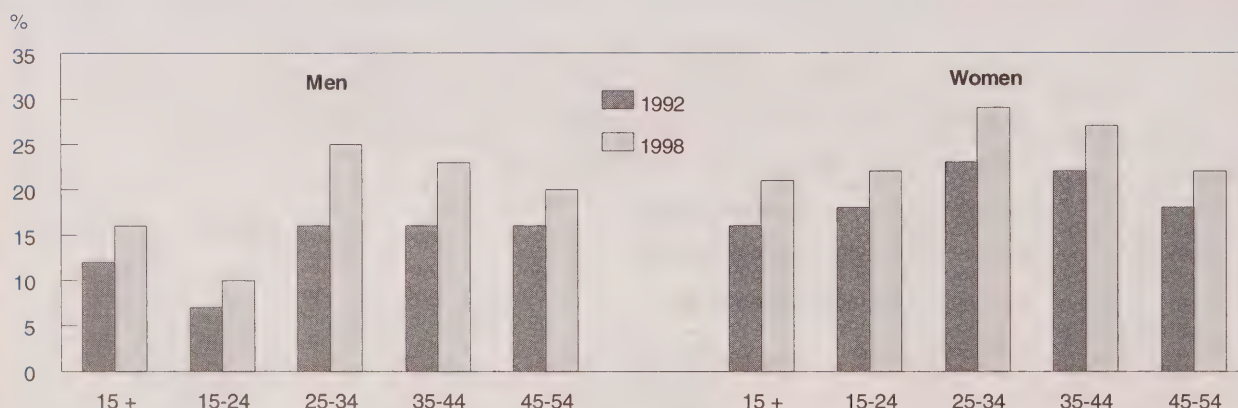
Overall, Canadians reported somewhat elevated levels of severe time-stress in 1998 compared with 1992, the date of the last survey. About 21% of all women aged 15 and over perceived themselves as time-stressed, up from 16% six years earlier. The corresponding proportion of men increased from 12% in 1992 to 16% in 1998.

Between 1992 and 1998, the proportion of men aged 25 to 44 who reported being time-stressed increased at a faster rate than the proportion of women

with similar complaints. About one-quarter of men and women in this age group said they were severely time-stressed. For men this was an increase from less than one in six in 1992.

Even young people under age 25, including those of high school age, reported some fairly high levels of time-stress. While young people as a whole were less likely to be time-stressed than other age groups, young women were twice as likely as young men to be severely time-stressed.

Time-stressed population by age, 1992 and 1998



Source: General Social Survey

Note: The figures for men aged 55 to 64 in 1992 and for all those 65 and over in both years were too small to be expressed.

Pension Plans in Canada Survey

The Pension Plans in Canada Survey is a census of all employer-sponsored registered pension plans in the country. Statistics are derived largely from administrative data provided to Statistics Canada by 10 pension supervisory authorities. Information collected includes type of pension plan,

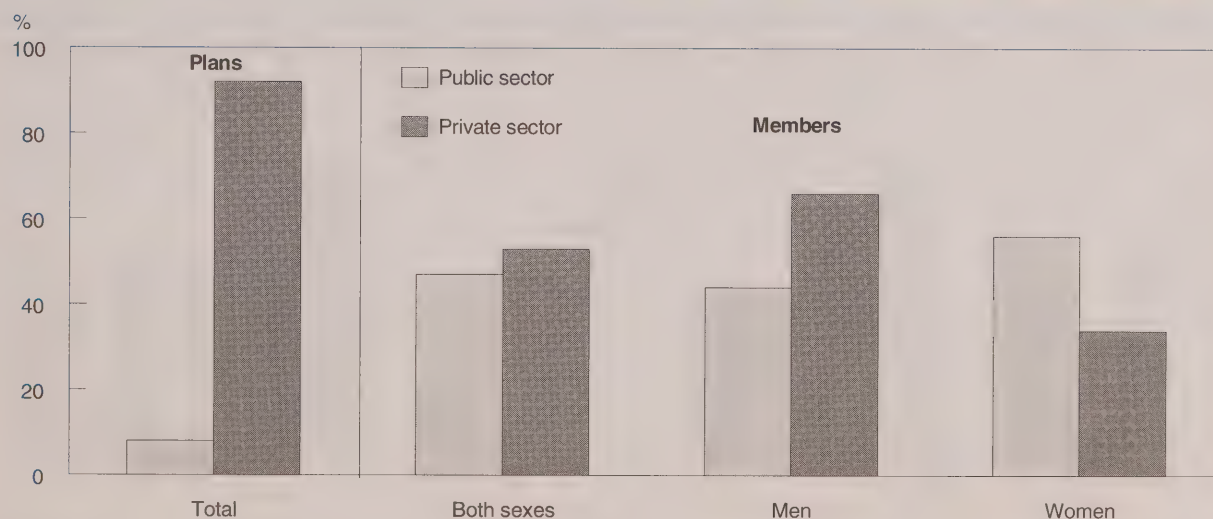
proportion of earnings contributed to pension plans, pension coverage by province, and private/public sector and industry breakdowns. Frequency: annual. Contact: Thomas Dufour (613) 951-2088, tom.dufour@statcan.ca.

Even though there were only 1,245 public sector pension plans—just 8% of all registered pension plans (RPPs)—at the beginning of 1998, these plans covered 2.4 million members, or 47% of all RPP participants. The remaining 13,968 plans covered 2.7 million private sector members, 53% of all RPP members.

Given both federal and provincial government downsizing, public sector membership dropped slightly between January 1, 1994 and 1996 (-3%) and again by the same amount between 1996 and 1998. Membership in private sector plans increased slightly over the same period (1% in each of the two-year periods).

One of the differences between private and public sector plans is their membership composition. At January 1, 1998, women accounted for more than half (56%) of all public sector pension plan members; in the private sector, they represented only 34% of the participants. Other differences include type of plan, funding instrument, benefit levels, employee contribution rates, normal retirement age and post-retirement indexing.

Registered pension plans and members by sector, January 1, 1998



Source: *Pension Plans in Canada Survey*

Survey of Work Arrangements (SWA)

The Survey of Work Arrangements (SWA) was conducted first in 1991 and again in 1995. A sub-sample of the Labour Force Survey (LFS), consisting of approximately 27,000 households, the SWA collected comprehensive data on the work arrangements (for example, schedules and routines) of Canadian workers. It also collected information on

emerging work arrangements such as flexitime, on-call work, working from home and moonlighting, as well as information on job quality. Frequency: occasional. Contact: Ernest B. Akyeampong (613) 951-4624, akyeern@statcan.ca.

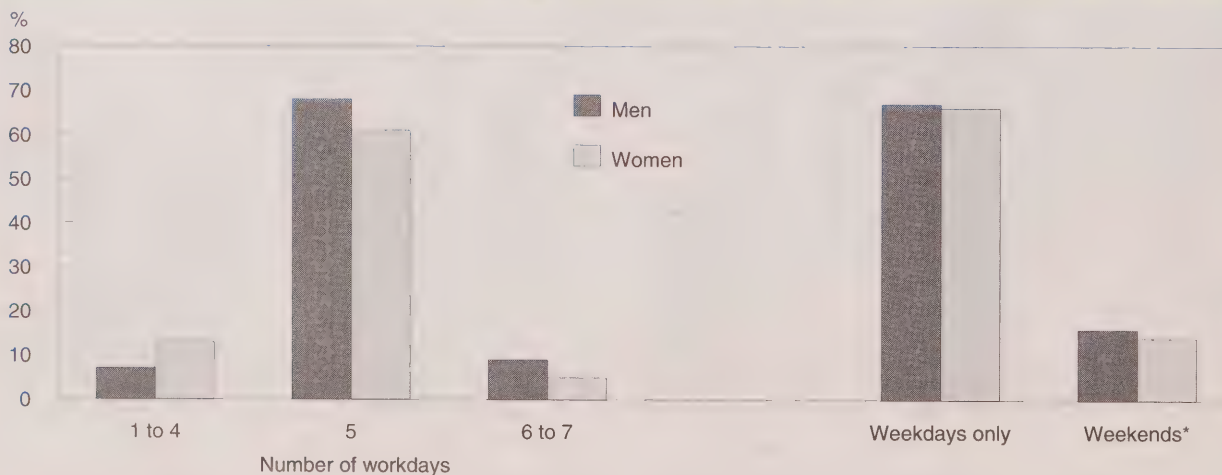
The proportion of employees who had a regular daytime schedule increased from 75% in 1991 to 81% in 1995. This arrangement remained more common among men than women (83% and 79%, respectively).

A majority of employees (63% in 1991 and 65% in 1995) worked a five-day week. A growing percentage worked more than five days (4% in 1991 and 7% in 1995), while the proportion working fewer than five days was almost unchanged (10%, compared with 9% in 1991). Some 410,000 (4% of the total) worked seven days a week, up substantially from the 114,000 (1%) who did so in 1991.

In 1995, men were more likely than women to work five days a week (68%, compared with 61%) or more than five days a week (9%, compared with 5%). On the other hand, a larger percentage of women than men worked fewer than five days a week (13%, compared with 7%).

Weekend work is on the rise. In 1995, some 15% of employees were on the job Saturdays and/or Sundays, compared with 11% in 1991. A larger proportion had to work both Saturdays and Sundays (7%, compared with 4% in 1991). Saturday work was more common than Sunday work (7%, compared with 1%).

Employees' number of workdays and days of work by sex, November 1995



Source: Survey of Work Arrangements, 1995

* Weekend workers may also work on weekdays.

Adult Education and Training Survey (AETS)

The Adult Education and Training Survey (AETS), a supplement to the regular Labour Force Survey (LFS), has been sponsored by Human Resources Development Canada (HRDC) a number of times. The 1998 survey collected information on the education and training activities of adults aged 17 and over during the 1997 calendar year. The survey results are classified by type and location of training, employer involvement in the training process, and barriers

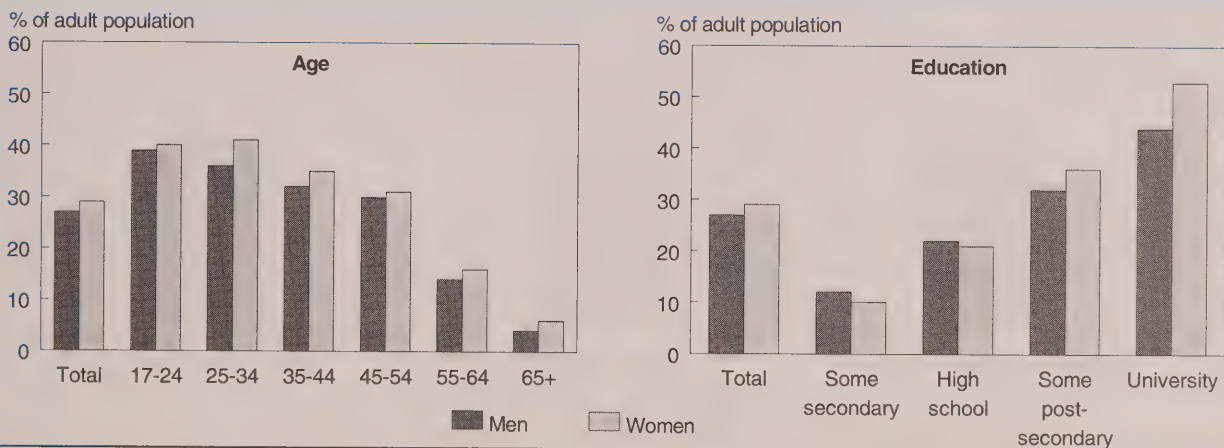
to training and education. The AETS concept of adult education and training includes all structured education (credit and non-credit) courses and training activities. These activities can be taken at work, at school or at other locations for job-related or personal interest reasons. Frequency: occasional. Contact: Client Services (613) 951-7355 or 1 888 297-7355, income@statcan.ca.

A large number of adults enrol in education and training activities after completing their initial education. In 1997, more than 6 million people, or 28% of adults, participated in adult education and training activities. As in previous surveys, age continued to be an important factor in the decision to participate in such activities. The percentages of adults participating ranged from 5% for those 65 or over to 39% for those 17 to 34.

The influence of education on participation is also visible. The rates of participation ranged from 11% among those with less than a high school diploma to 48% among those with a university degree.

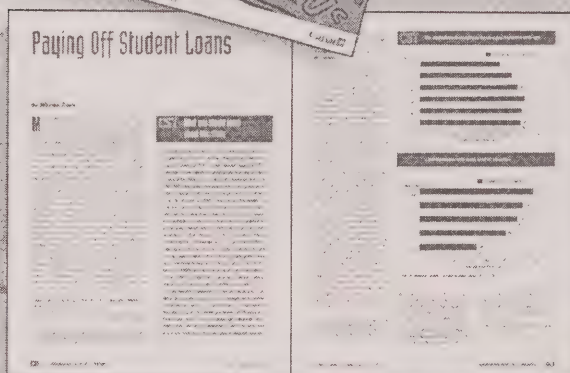
Canadians tend to invest in further education as a means of remaining competitive in the labour market. Three out of four adults participating in an education or training activity in 1997, representing 21% of the adult population, reported doing so for job-related reasons; 10% of the adult population participated for personal interest or leisure. Some 24% of the employed population enrolled in job-related education or training activities sponsored by their employer.

Participation in adult education and training by age and education, 1997



Source: Adult Education and Training Survey, 1998

Canadians in the spotlight



Society is changing rapidly. It's a constant challenge for you to stay informed about the important social issues and trends affecting us all. **Canadian Social Trends** helps you meet that challenge successfully by bringing you dynamic and invaluable social analysis in a clear, concise and highly readable format.

Each issue of this popular Statistics Canada quarterly brings key elements of Canadian life into the spotlight — labour markets, immigration, evolving family structure, standard of living. The easy-to-read articles

draw from a wide range of demographic, social and economic data sources. Tables and charts highlight key points. A Social Indicators table tracks change.

Social science professionals, researchers, business and policy analysts, educators, students and the general public rely on **Canadian Social Trends**. Subscribing

today will help you keep abreast of change, evaluate social conditions, plan programs or services, and much more!

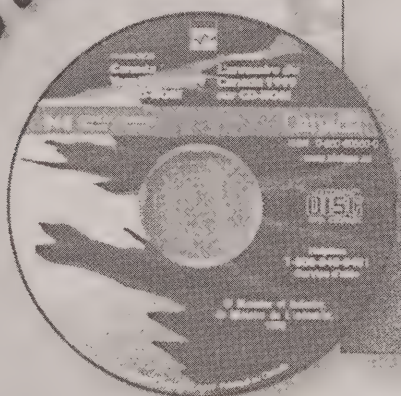
Visit the "In-Depth" section of our Web site at www.statcan.ca to view some recent articles.

Subscribe today! You won't want to miss a single issue!

Only \$36 (plus either GST and applicable PST or HST) annually in Canada and US\$36 outside Canada! To order **Canadian Social Trends** (Cat. No. 11-008-XPE), write to Statistics Canada, Dissemination Division, Circulation Management, 120 Parkdale Avenue, Ottawa, Ontario, K1A 0T6, Canada, or contact the nearest Statistics Canada Regional Reference Centre listed in this publication. If more convenient, fax your order to 1 877 287-4369, call 1 800 287-6677 or send an e-mail to order@statcan.ca. Subscribe on our Web site to the downloadable version of **Canadian Social Trends** (Cat. No. 11-008-XIE) for only \$27 in Canada, US\$27 outside Canada. URL: www.statcan.ca/cgi-bin/downpub/feepub.cgi

Canada Year Book 1999

Your Guide from Coast to Coast!



THE CANADIAN REFERENCE THAT ANSWERS YOUR QUESTIONS ABOUT CANADA, AND EVEN THOSE YOU NEVER THOUGHT TO ASK, IS NOW AVAILABLE AS A CAPTIVATING BOOK, AS A USER-FRIENDLY CD-ROM AND AS A PRACTICAL COMBINATION PACKAGE. CONVENIENT AT WORK, SCHOOL AND HOME, **CANADA YEAR BOOK 1999** BOTH DISPLAYS AND ANALYZES THE COMPLEXITIES OF LIVING AND WORKING IN CANADA TODAY.

Time and time again, you will turn to **Canada Year Book 1999** for penetrating articles, accurate statistics, clear tables, informative graphs and exquisite photographs spotlighting key trends and changes in our social, political and economic lives.

Choose **Canada Year Book 1999** or **Canada Year Book 1999 on CD-ROM** as your reference companion. You can order the book (cat. no. 11-402-XPE99001) for \$54.95,

the CD-ROM (cat. no. 11-402-XCB99001) for \$74.95, OR the Book/CD-ROM Combination Package (cat. no. 10-3005XKE99001) available at the special price of \$123.41. (Prices exclude shipping and handling as well as applicable taxes.)

To order, call toll-free 1 800 267-6677, fax toll-free 1 877 287-4369 or write to Statistics Canada, Dissemination Division, Circulation Management, 120 Parkdale Avenue, Ottawa, Ontario, K1A 0T6, Canada. You may also e-mail your order to: order@statcan.ca or contact your nearest Statistics Canada Regional Reference Centre listed in this publication.



Visit our Web site: www.statcan.ca and try out a FREE DEMO of CYB99 on CD-ROM or download the FREE CYB99 Teacher's Kit!

PERSPECTIVES

ON LABOUR AND INCOME

THE COMPREHENSIVE JOURNAL

on labour and income
from Statistics Canada

☐ Yes, I want PERSPECTIVES ON LABOUR AND INCOME
(Catalogue no. 75-001-XPE).

Subscribe to *Perspectives on Labour and Income* today!

Save
by extending your
subscription!

Save 20%
by subscribing for 2 years!
Only \$92.80 (plus taxes)

Save 30%
by subscribing for 3 years!
Only \$121.80
(plus taxes)



MAIL

Statistics Canada
Circulation Management
120 Parkdale Avenue
Ottawa, Ontario
Canada K1A 0T6



PHONE

1 800 267-6677
Charge to VISA or MasterCard.
Outside Canada and the U.S.,
and in the Ottawa area, call
(613) 951-7277.



FAX

1 800 889-9734
(613) 951-1584



E-MAIL

order@statcan.ca

Please do not send confirmation for phone or fax orders.

METHOD OF PAYMENT (Check only one)

☐ Charge to my: ☐ MasterCard ☐ VISA

Card Number

Authorized Signature

Expiry Date

Cardholder (Please print)

☐ Payment Enclosed \$

☐ Purchase Order Number

Authorized Signature

ORDER FORM

Catalogue No.	Title	Subscription	Canada \$	Outside Canada US\$	Quantity	Total \$
75-001-XPE	Perspectives on Labour and Income	1 year	58.00	58.00		
		2 years	92.80	92.80		
		3 years	121.80	121.80		

ALL PRICES EXCLUDE SALES TAX.

Canadian clients pay in Canadian funds and add 7% GST and applicable PST or HST.

Note: Catalogue prices for clients outside Canada are shown in US dollars.

Clients outside Canada pay total amount in US funds drawn on a US bank.

GST # R121491807.

Cheque or money order should be made payable to the Receiver General for Canada.

PF 097042

Subtotal

GST (7%) - (Canadian clients only, where applicable)

Applicable PST (Canadian clients only, where applicable)

Applicable HST (N.S., N.B., Nfld.)

Grand Total



Statistics Canada
Statistique Canada

Canada

Canada A Portrait

The Perfect Gift for Your Family,
Friends, Colleagues and Clients

In this era of electronic communication, we appreciate more than ever the lasting beauty of a well-designed hardcover book. Treat yourself and others to *Canada A Portrait*, a panoramic view of our society and landscape.

Canada A Portrait profiles our country as we head into the new century

In 204 pages, *The Land, The People, The Society, Arts and Leisure, The Economy*, and *Canada in the World* are all masterfully and permanently captured with engrossing narrative and more than 100 illustrations. Each chapter is prefaced by a very personal contribution from one of our most talented and respected citizens: Susan Aglukark, Pierre Berton, Richard Lipsey, Monique Mercure, Oscar Peterson and David Suzuki.

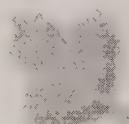
This eye-catching volume provides everyone with a stimulating and realistic image of Canada's social, economic and cultural life. Inside a full-colour dustjacket, a unique mix of articles on the off-beat and the amusing amplify the story. For example, did you know that

- the first kiss ever recorded in a moving picture featured a Canadian actress, May Irwin?
- Canadians invented the zipper and the paint roller?
- there are more Visa and MasterCard issued than there are Canadians?

Since publication of the first edition in 1927, *Canada A Portrait* has been praised for its excellence. This 56th edition builds on this Statistics Canada tradition, offering booklovers a true celebration of Canada.



A Celebration of Canada



Connect with Canada
at the close of a century.
Celebrate the beginning
of a millennium.

Order your copies today!

Canada A Portrait (cat. no. 11-403-XPE00001)
costs \$42.95 plus shipping, handling and applicable taxes.

CALL toll-free 1 800 267-6677

FAX toll-free 1 877 287-4369

E-MAIL to order@statcan.ca

WRITE to Statistics Canada, Dissemination Division,
Circulation Management, 120 Parkdale Avenue, Ottawa,
Ontario, K1A 0T6, Canada

CONTACT your nearest Statistics Canada Regional Reference
Centre listed in this publication.

Visit the Statistics Canada Web site at
www.statcan.ca

PERSPECTIVES

ON LABOUR AND INCOME

To keep up with ...

- the education levels and the training of the labour force in Canada
- the distribution of income and trends in wages in the country
- updates on research under way in the labour and income field
- the availability of new income and labour market data

... you need

PERSPECTIVES ON LABOUR AND INCOME (Catalogue no. 75-001-XPE) from Statistics Canada.

A yearly subscription to **Perspectives on Labour and Income** (four issues) costs just \$58.

Mail your order to Statistics Canada, Operations and Integration Division, Circulation Management, 120 Parkdale Avenue, Ottawa, Ontario K1A 0T6. Or FAX **1 (613) 951-1584** or **1 800 889-9734**, or call toll free **1 800 267-6677** and use your VISA or MasterCard. E-mail: **order@statcan.ca**

Catalogue no. 75-001-XPE



PERSPECTIVES

ON LABOUR AND INCOME

SUMMER 2000
Vol. 12, No. 2

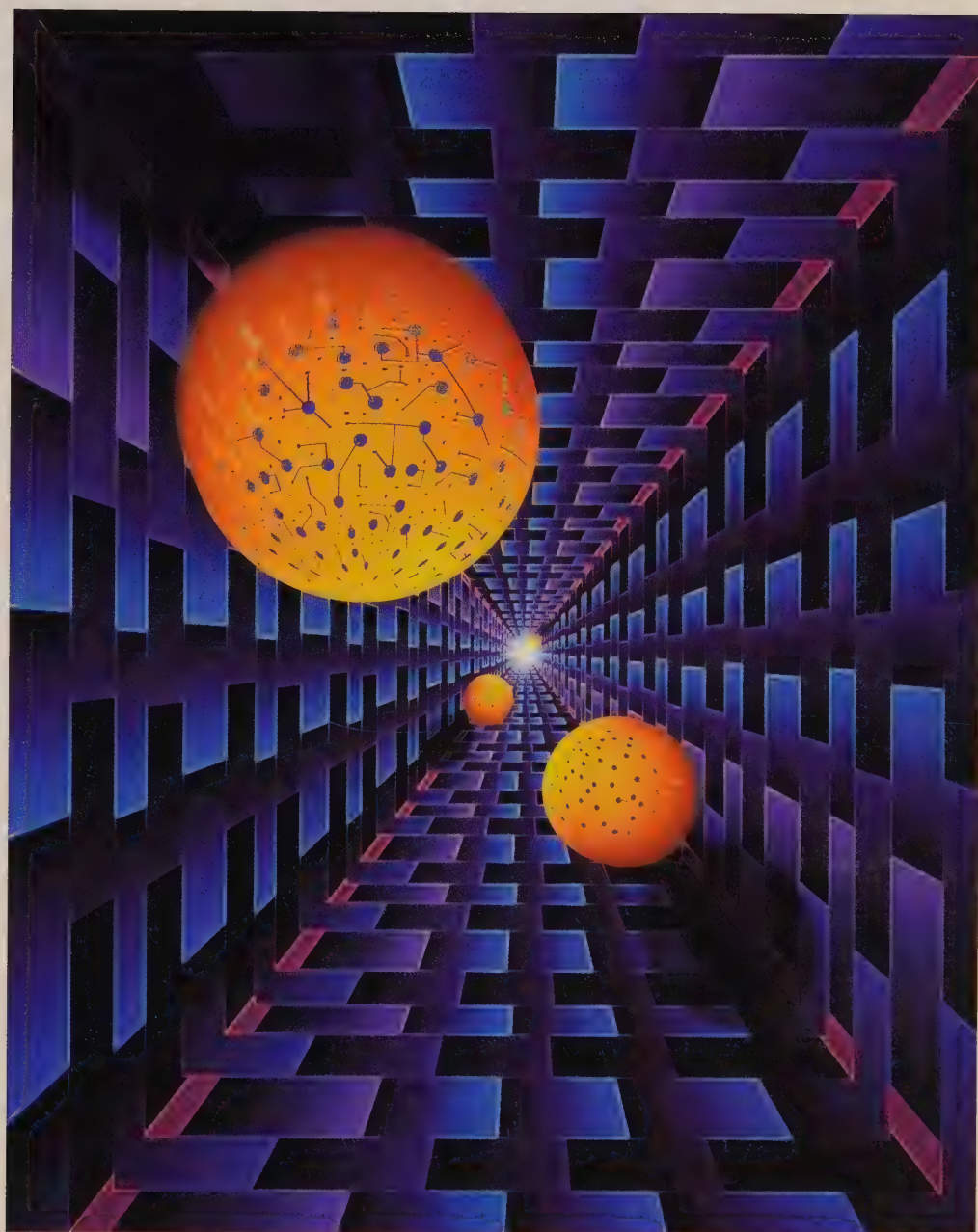
■ PROVINCIAL EARNINGS

■ HELP WANTED

■ PAYROLL TAXES

■ INCOME TAXES

■ KNOWLEDGE WORKERS



Statistics
Canada

Statistique
Canada

Canada

At Your Service...

Data in many forms

Statistics Canada disseminates data in a variety of forms. In addition to publications, both standard and special tabulations are offered. Data are available on the Internet, compact disc, diskette, computer printouts, microfiche and microfilm, and magnetic tape. Maps and other geographic reference materials are available for some types of data. Direct online access to aggregated information is possible through CANSIM, Statistics Canada's machine-readable database and retrieval system.

Statistics Canada's Regional Reference Centres in Canada's major cities

Halifax	(902) 426-5331	Regina	(306) 780-5405
Montréal	(514) 283-5725	Edmonton	(780) 495-3027
Ottawa	(613) 951-8116	Calgary	(403) 292-6717
Toronto	(416) 973-6586	Vancouver	(604) 666-3691
Winnipeg	(204) 983-4020		

You can also visit our World Wide Web site: <http://www.statcan.ca>

For information on the wide range of data available from Statistics Canada, you can contact us by calling one of our toll-free numbers. You can also contact us by e-mail or by visiting our Web site.

National inquiries line	1 800 263-1136
National telecommunications device for the hearing impaired	1 800 363-7629
Depository Services Program inquiries	1 800 700-1033
Fax line for Depository Services Program	1 800 889-9734
E-mail inquiries	infostats@statcan.ca
Web site	www.statcan.ca

Ordering/Subscription information

This product can be ordered by

- Phone (Canada and United States) 1 800 267-6677
- Fax (Canada and United States) 1 877 287-4369
- E-mail order@statcan.ca
- Mail Statistics Canada
Dissemination Division
Circulation Management
120 Parkdale Avenue
Ottawa, Ontario K1A 0T6
- And, in person at the Statistics Canada Regional Centre nearest you, or from authorized agents and bookstores.

When notifying us of a change in your address, please provide both old and new addresses.

Standards of service to the public

Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner and in the official language of their choice. To this end, the agency has developed standards of service which its employees observe in serving its clients. To obtain a copy of these service standards, please contact Statistics Canada toll free at 1-800-263-1136.

PERSPECTIVES

ON LABOUR AND INCOME

■ Departments

- 3 Forum
- 7 Highlights
- 47 What's new?
- 55 Key labour and income facts
Canada-U.S. comparison
- 63 In the works

Perspectives on Labour and Income (Catalogue no. 75-001-XPE; aussi disponible en français: *L'emploi et le revenu en perspective*, n° 75-001-XPF au catalogue) is published quarterly by authority of the Minister responsible for Statistics Canada. ©Minister of Industry 2000. ISSN: 0840-8750.

SUBSCRIPTION RATES: CDN \$18.00 per issue, CDN \$58.00 for a one-year subscription.

Shipping charges outside Canada:

	Single issue	Annual subscription
United States	CDN \$ 6.00	CDN \$24.00
Other countries	CDN \$10.00	CDN \$40.00

All prices exclude sales taxes.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any other means, electronic, mechanical, photocopying, recording or otherwise, without prior written permission from Licence Services, Marketing Division, Statistics Canada, Ottawa, Ontario, Canada K1A 0T6.

Indexed in the *Canadian Index*, *Canadian Periodical Index*, *P.A.I.S. International and Sociological Abstracts*, and available online in *Canadian Business and Current Affairs* and *Employee Benefits Infosource*. Also indexed in French in *L'Index de l'Actualité* and *Point de Repère*.

■ Articles

9 Provincial earnings differences

Kamal K. Sharan

This study defines average annual earnings as the product of three components: hourly earnings, weekly hours and annual weeks. It looks at each component's contribution to differences in provincial earnings.

14 Help-wanted Index

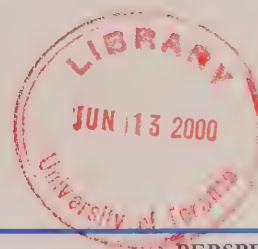
Benjamin Amoah

Employment and unemployment rates have historically been used as indicators of labour market conditions. This study evaluates the performance of another indicator, the Help-wanted Index, and re-examines the association between it and employment rates, unemployment rates and hirings from 1981 to 1999.

19 Payroll taxes—structure and statutory parameters

Zhengxi Lin

Payroll taxes have grown substantially since the early 1980s, and have become an increasingly important source of government revenues. This article, part one of a two-part analysis, details the various payroll taxes collected by the federal and provincial governments. A subsequent article will report on national and provincial trends in the level, growth and role of each component and compare Canadian payroll taxes to those of the other G-7 countries.



PERSPECTIVES

ON LABOUR AND INCOME

■ Editor-in-Chief

Ian Macredie
(613) 951-9456
ian.macredie@statcan.ca

■ Managing Editor

Henry Pold
(613) 951-4608
henry.pold@statcan.ca

■ Editors

Catherine Hardwick
Bruce Rogers

■ Data Services

Pierre Bérard
Joanne Bourdeau
Laura Fraser

■ Production and Composition

Heather Berrea
Cynthia Fortura
Diane Joannis
Annamma John
Ann Trépanier

■ Printing

Dissemination Division

Symbols

The following standard symbols are used in Statistics Canada publications:

- figures not available
- ... figures not appropriate or not applicable
- nil or zero
- amount too small to be expressed
- p preliminary figures
- r revised figures
- x confidential to meet secrecy requirements of the Statistics Act

The paper used in this publication meets the minimum requirements of American National Standard for Information Sciences – Permanence of Paper for Printed Library Materials, ANSI Z39.48 – 1984.

28 Income taxes in Canada and the United States

Michael Wolfson and Brian Murphy

Much discussion of comparative tax rates is based on federal statutory income tax rates. But taxes actually paid are often quite different, owing to various tax deductions, credits, surtaxes and payroll taxes. This study uses effective rather than statutory tax rates to compare income taxes paid by individuals and families in Canada and the United States.

32 Knowledge workers on the move

John Zhao, Doug Drew and T. Scott Murray

This article examines available empirical evidence about Canada's "brain drain"—the loss of knowledge workers to the United States. It also looks at Canada's "brain gain"—the acquisition of knowledge workers from the rest of the world. (Adapted from an article in the Spring 2000 issue of *Education Quarterly Review*).

Back Issues: *Did you miss something?*

Don't worry! Back issues of **Perspectives on Labour and Income** are available.

Feature articles in these issues include:

- | | |
|--------------------|--|
| Spring 2000 | RRSPs • Earnings of lawyers • Gambling update • Young volunteers • School-to-work • Long hours and health |
| Winter 1999 | "Copreneurs" • Truck drivers • Earnings ratios • Earnings of physicians • Exports, GDP and jobs • Cumulative index |
| Autumn 1999 | Seniors volunteering • Return to work after childbirth • Baby boom women • Missing work • Self-employment • Unionization |
| Summer 1999 | Earnings mobility • Retiring later • Retirement savings • Hours of work • Literacy and work |

For more information contact **Statistics Canada, Operations and Integration Division, Circulation Management**, 120 Parkdale Avenue, Ottawa, Ontario K1A 0T6. Or, call toll free 1 800 267-6677.

Perspectives on Labour and Income

The quarterly for labour market and income information

Forum

From the Managing Editor

■ Weather is not the only perennial source of conversation in Canada. Almost anywhere one looks, one finds some sort of comparison with the United States—taxes, salaries, cost of living, unemployment, and the list goes on. However, much of the discussion is based on anecdotal or incomplete information. For example, much recent debate has focused on the issue of lower taxes south of the border and whether it has spurred a mass emigration of Canada's brightest and best. But how large is the exodus? An article in this issue (extracted from the Spring 2000 issue of *Education Quarterly Review*) provides some hard data on the phenomenon and looks at some of the measurement problems involved. And as the study on income taxes in Canada and the United States points out, the tax situation is far from clear-cut—in any given income range (adjusted for purchasing power), one finds a significant overlap in effective tax rates.

To round out the discussion, an article on payroll taxes in Canada sets the stage for an upcoming comparison with the United States and the other members of the G-7. As further background, "Key labour and income facts" provides a set of charts comparing Canada and the United States on a variety of topics: employment and unemployment, education and training, income, and others. Finally, we've included a discussion on sources of difference in provincial earnings and a new look at the Help-wanted Index as an indicator of labour market trends.

Henry Pold
Managing Editor
E-mail: henry.pold@statcan.ca

In the mail...

■ I enjoyed reading your piece on gambling today.

While I haven't finished reading it, I have a few thoughts that I would like to pass on for consideration.

First, the use of the mean to report expenditures may not be appropriate in this case. I suggest that if

you check your raw data you will find measures of expenditure to be highly skewed. For example, in Nova Scotia 0.9% of the total adult population (approximately 16% of players) accounts for 53% of total VLT [video lottery terminal] revenue. These people spend "on average" \$820 per month.

The majority of players (about 32% of all adults) in Nova Scotia (we call them casual players) spend "on average" about \$1.30 per month. My sense is that this information renders the reporting of mean estimates not only weak (at best), but downright dangerous.

Second, (this one is sort of a philosophical piece) not all gambling activities are created equal. In practical terms we need to start thinking about some of these activities differently. For example, from a public health/policy perspective, it makes little sense putting the person who buys a raffle ticket from the local boy scout troop in with someone who plays the VLT three hours a day, seven days a week. Gambling has been, and always will be, pervasive in our society. That has not changed for hundreds of years. The fact is, though, the "business" of gambling has, and it has created social issues that can be tackled only when we start looking at it (and measuring it) a little differently.

Our operational definition of "gambling" needs to change to reflect the rise in the "business" of gambling in Canada.

This is a fascinating subject that I am happy to see Statistics Canada involved in. Your organization has the capability to contribute a good deal to this field, I suspect, particularly by providing "monitoring" kinds of measures.

Ray MacNeil

.....

■ You make a good point in suggesting that average expenditure rates can be misleading, and that the distribution of the rates should be looked at as well. The mean or average can certainly hide skewness in the data. I will definitely keep this in mind when I examine the data again.

Outside of the Survey of Household Spending, which allows for the examination of annual household participation and expenditure rates for broad types of gambling, Statistics Canada does not have specific data on the prevalence of gambling in Canada. So, unfortunately, we have no detailed information on who gambles, what games they choose, how often they gamble and how much they spend.

I agree that gambling has become pervasive in this country, and perhaps that is why there has been such interest in the gambling-related articles published in Perspectives. I thank you again for your interest.

Katherine Marshall

■ I wish to commend you on your work exploring household expenditures on gambling, including the recent "Update on gambling," in the Spring 2000 issue of *Perspectives*.

Your previous work in this area prompted the Nova Scotia Alcohol and Gaming Authority (NSAGA) to further analyze consumer expenditures in order to assess the social and economic consequences of gaming in the province. In the summer of 1999, the NSAGA contracted MPM Gaming Research to examine the relationship between gambling expenditures and other forms of consumer spending, sources and levels of income, and debt. MPM Gaming Research conducted detailed analyses of the 1996 Family Expenditure Survey and the 1997 Survey of Household Spending in order to examine gambling expenditure in Nova Scotia, compared with Saskatchewan and Canada total figures. Their findings closely paralleled yours, although the analyses were more specific to Nova Scotia.

The NSAGA 1998/99 *Annual Gaming Report* presents a compilation of gambling-related research in Nova Scotia during the past fiscal year. Included as Appendix D (volume II), is the aforementioned study conducted by MPM Gaming Research, "Convenience gambling in Nova Scotia: A study of consumer income and expenditure patterns." The paper is discussed in the main body of the report in chapter 4 (volume I).

Here in Nova Scotia we have a legislative mandate to continually study the public interest and reactions to gambling, as well as the social, economic, health and

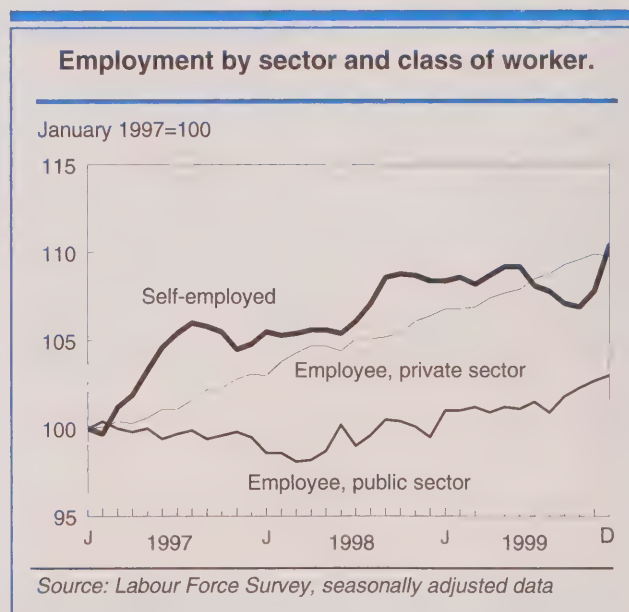
justice impacts from gambling. The intent of such research is to provide objective evidence in order to advance a balanced debate over gaming issues. One hopes our efforts help to address the observation made in your recent article, which states: "Both those in favour of and those opposed to this provincially controlled and regulated industry continue to express the need for further information on the subject."

Joel Baltzer

For the record...

Revised historical labour force survey data

■ As noted in our Spring 2000 issue ("What's new?"), all Labour Force Survey (LFS) historical data have been revised to reflect a new method of estimation and new definitions for the public and private sectors, as well as population counts based on the 1996 Census. In "Key labour and income facts" in the same issue, unrevised LFS data were used in the chart depicting changes in employment by sector and class of worker. The same chart using the revised data is shown below.



To harmonize with other Statistics Canada data sources, the LFS introduced a new definition of the public and private sectors. Instead of basing the definition only on ownership, the new definition is also based on whether the workplace is publicly or privately funded. Those most affected by this conceptual change work in hospitals and universities. To preserve historical consistency as much as possible, workers in these industries were recoded from private to public back to 1976. However, it was not possible to make such revisions for all workers affected by the change in concept. As a result, public employment prior to the full implementation of the new coding concepts is somewhat underestimated.

To better reflect real changes in public and private sector employment, and to avoid a break in the series, the historical seasonally adjusted series have been modified. In addition, the annual averages available on CANSIM have been calculated using the “modified” seasonally adjusted data instead of the unadjusted data.

For further information regarding the changes, contact Jean Marc Lévesque, Labour Statistics Division, at (613) 951-2301; jean_marc.levesque@statcan.ca.

Perspectives

We welcome your views on articles and other items that have appeared in *Perspectives*. Additional insights on the data are also welcome, but to be considered for publication, communications should be factual and analytical. We encourage readers to inform us about their current research projects, new publications, data sources, and upcoming events relating to labour and income.

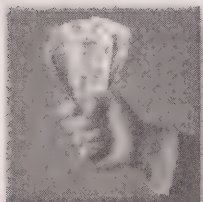
Statistics Canada reserves the right to select and edit items for publication. Correspondence, in either official language, should be addressed to Bruce Rogers, “What’s new?” *Perspectives on Labour and Income*, 9th floor, Jean Talon Building, Statistics Canada, Ottawa K1A 0T6. Telephone (613) 951-2883; fax (613) 951-4179; e-mail: bruce.rogers@statcan.ca.



Get online

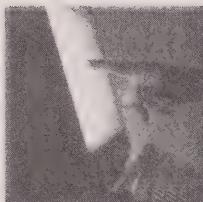
with Statistics Canada's Electronic Publications!

Go virtual with Statistics Canada's electronic publications. From Arts and Culture to Travel, Transport and Warehousing, you have over 120 titles in 18 topic categories to choose from — and the list is growing every day.



Save money.

Order online and you'll receive a 25% price reduction from that of our print publications.



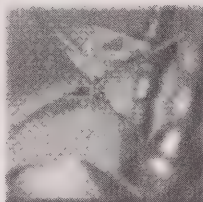
Built to last.

Unlike paper, e-versions won't yellow, fade or tear. They will stay intact and accessible for years to come!



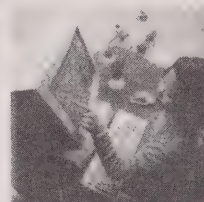
Feel safe about ordering online.

Our secure site makes using your credit card online safe and easy. Guaranteed.



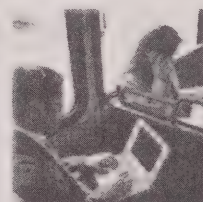
Save time.

Access your publication on the day of release — no more waiting for delivery.



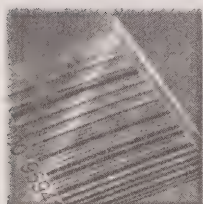
Be the first to know.

Our electronic publications are regularly available before print versions, so you always have access to the most current releases.



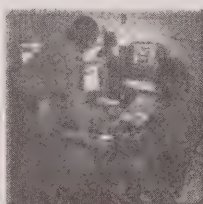
Access anywhere, anytime.

Get up-to-date detailed information quickly and efficiently, regardless of location and time constraints.



One price, many rewards.

Statistics Canada subscriptions offer indefinite access to your publication and up to three years of its previous issues.



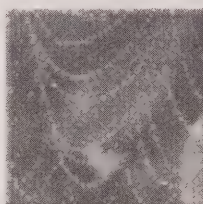
Put the data to work.

Copy text from our online publications right into your documents and databases.



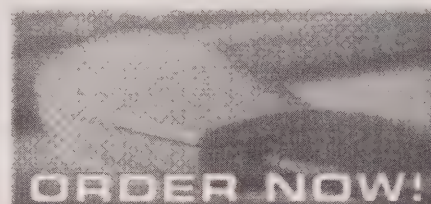
Find the information you need now.

Online documents allow you to search, locate and print exactly what you are looking for.



Be green.

By consciously choosing electronic over paper, you're doing your part to be ecologically friendly. Feel good about doing business, respecting the environment and saving precious resources.



ORDER NOW!

On our site, go to Products and Services, select Downloadable publications (\$) and simply follow the steps to subscribe or purchase. It's that easy!

www.statcan.ca
BUILT FOR BUSINESS

The official source of Canadian statistics All the time — All in one place

Highlights

In this issue

■ **Provincial earnings differences**

... p. 9

- Average annual earnings in 1997 varied substantially across provinces, ranging from \$19,200 in Prince Edward Island to \$29,400 in Ontario.
- Average annual earnings are defined as the product of hourly earnings, weekly hours and annual weeks. Lower average annual earnings (relative to those of Ontario) were due primarily to lower average hourly wage rates. In British Columbia, however, lower average annual earnings were the result of fewer weekly hours and fewer annual weeks worked. On an hourly basis, workers in British Columbia on average earned more than their counterparts in Ontario.
- In some cases, average annual earnings would have been lower in Ontario, owing to the effect of one factor (the other two having been made equal—standardized). But the effects of the other two components were so strong that this province's overall average annual earnings remained highest.
- In the case of Ontario–Quebec and Ontario–Manitoba, Ontario's values were consistently higher in all three components. Therefore, no matter how the average annual earnings in Quebec and Manitoba are standardized, they were lower than those in Ontario.

■ **Help-wanted Index**

... p. 14

- According to data from the 1980s and 1990s, the Help-wanted Index (HWI) (a measure of unmet labour demand) tended to be a predictor of labour market conditions.

- Rises in the index were followed some months later by a hike in the employment rate and a drop in the unemployment rate.

- The index was also positively (but weakly) associated with recent hirings (derived from the monthly Labour Force Survey). A much stronger relationship existed between the HWI and annual hirings (measured by the Longitudinal Worker File).

■ **Payroll taxes—structure and statutory parameters**

... p. 19

- Payroll taxes have become an increasingly important source of government revenues. Total taxes collected from employers and employees amounted to \$48 billion in 1997, 14% of combined federal and provincial government revenues.
- Nine payroll taxes are administered in Canada: two by the federal government, one by all provincial/territorial governments, and six by five provincial/territorial governments.

■ **Income taxes in Canada and the United States**

... p. 28

- For the one-third of families in Canada and the United States with incomes of less than C\$25,000 in 1997, average effective tax rates were the same or lower in Canada.
- The largest difference (5.3 percentage points) in effective tax rates between the two countries was for families with incomes of \$50,000 to \$99,999.

- Except for the lowest income group, effective tax rates varied more widely in Canada than in the United States.
- The average effective tax rates in 1997 for families with incomes of \$150,000 or more were 32.8% in Canada and 27.6% in the United States.

■ Knowledge workers on the move ... p. 32

- The number of Canadian taxfilers who moved to the United States in 1997 is estimated to be between 14,000 and 23,000, an increase from the 8,000-to-12,000 range in 1991.
- Canada suffers a net loss of workers to the United States in a variety of key knowledge-based occupations. Only about 0.1% of people with employment income are reflected in this loss, however: less than 1% of the stock of workers in any one of these occupations.
- Of the 1995 university graduates who moved to the United States, a disproportionately high percentage (12%) were doctoral graduates. This may be partly the result of NAFTA provisions, which have made it easier for well-educated Canadians to live and work in that country.
- Some 0.9% of taxfilers with annual incomes of \$150,000 or more left Canada in 1996, a migration rate nine times higher than that of all taxfilers.
- On the other hand, Canada receives more university graduates from elsewhere than it loses to the United States. For every university graduate migrating from Canada to the United States, four degree holders migrate from the rest of the world to Canada.
- Immigrants in the 1990s accounted for about one-third of the increase in employment among computer engineers, systems analysts and computer programmers.

■ What's new?

... p. 47

■ Just released

Longitudinal Administrative Databank

Historical Labour Force Statistics, 1999

Education Indicators in Canada

"The labour market in the 1990s, Part II: Distributional outcomes—Who is winning and losing?" *Canadian Economic Observer*

Introducing the Dissemination Area for the 2001 Census Annual Demographic Statistics, 1999

Determinants of Innovative Activity in Canadian Manufacturing Firms: The Role of Intellectual Property Rights

Social Transfers, Earnings and Low-income Intensity among Canadian Children, 1981-96: Highlighting Recent Developments in Low-income Measurement

The Maturation of Canada's Retirement Income System: Income Levels, Income Inequality and Low Income among the Elderly

Farm statistics

Employment Dynamics

Small Business Profiles

Income in Canada

Income Trends in Canada

Retirement Savings through RPPs and RRSPs, 1991 to 1997

Perspectives

Provincial earnings differences

Kamal K. Sharan

Economic differences among Canadian provinces are well documented and several recent studies have tried to explain why they exist.¹ Possible sources of difference include labour-capital mobility; fiscal, taxation and economic policies; industrial and occupational structures; endowment of natural resources, and labour demand functions (Johnson and Kneebone, 1987; Prichard, 1983; Shaw, 1986; Vanderkamp, 1973).

This article looks at provincial differences in average annual earnings. Earnings are the product of hourly earnings, weekly hours and weeks worked per year. Defined this way, annual earnings comprise one price component (hourly earnings) and two quantity components (weekly hours and annual weeks). A standard statistical technique (see *Standardization and decomposition*) allows the difference in earnings between two provinces to be attributed to one or more components, though the reasons behind such differences are not addressed. Although any province could have been chosen as the reference, this study uses Ontario because it has the highest annual earnings. The data are from the Survey of Labour and Income Dynamics (see *Data source and definitions*).

Average annual earnings in 1997 varied substantially across provinces, ranging from \$19,200 in Prince Edward Island to \$29,400 in Ontario (Table 1). With the exception of British Columbia, lower average annual earnings (relative to those of Ontario) were due primarily to lower average hourly wage rates, and to a lesser degree, fewer average weeks worked. Differences in average weekly hours contributed little to the provincial variation in earnings. The notable exception was British Columbia, where lower average annual earnings were fully explained by fewer weekly hours and fewer annual weeks worked. On an hourly basis, workers in British Columbia on average earned more than their counterparts in Ontario (Table 2).

Kamal K. Sharan is with the Labour Statistics Division. He can be reached at (613) 951-4023 or sharkam@statcan.ca.

Table 1: Average annual earnings and their components

	Annual earnings	Hourly earnings	Weekly hours	Annual weeks
	\$			
Canada	27,100	15.58	36.1	48.3
Ontario	29,400	16.39	36.1	49.8
British Columbia	28,300	16.74	35.2	48.1
Alberta	27,100	15.04	37.6	47.9
Quebec	25,500	15.29	35.4	47.2
Manitoba	24,000	13.98	35.7	48.0
Saskatchewan	23,100	13.37	37.0	46.7
Nova Scotia	22,500	13.06	36.7	47.0
New Brunswick	21,900	12.89	37.8	44.9
Newfoundland	20,200	12.87	37.0	42.5
Prince Edward Island	19,200	11.72	39.0	41.8

Source: Survey of Labour and Income Dynamics, 1997

Provincial earnings differences

All provinces east of Quebec had higher weekly hours values in 1997. Moreover, the Atlantic provinces experienced a greater earnings gap with Ontario than did the other provinces (Chart A).

The difference in total average annual earnings between Ontario and British Columbia was \$1,117 (Table 3). If average annual earnings are standardized for weekly hours and annual weeks, earnings in British Columbia were higher than those in Ontario—by \$611. On the other hand, higher weekly hours in Ontario, and higher annual weeks, accounted for \$705 (63%) and \$1,022 (92%) of the difference, respectively. Thus, the annual weeks and weekly hours effects in Ontario offset the hourly earnings effect in British Columbia (Chart B).

The total difference between Ontario and Alberta was \$2,331. Given the same (standardized) weekly hours and annual weeks, the earnings gap would have

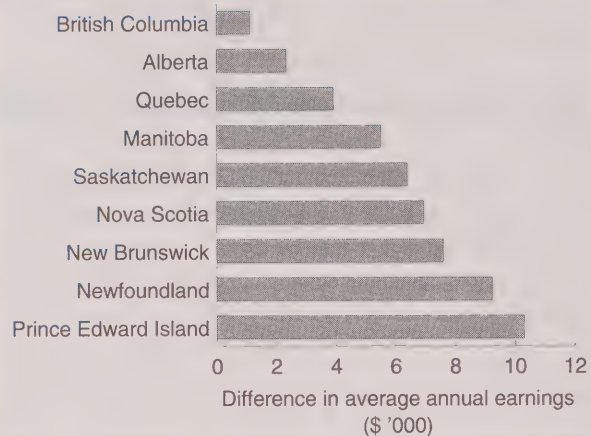
Table 2: Provincial rankings

Highest	
Annual earnings	Ontario
Hourly earnings	British Columbia
Weekly hours	Prince Edward Island
Annual weeks	Ontario
Lowest	
Annual earnings	Prince Edward Island
Hourly earnings	Prince Edward Island
Weekly hours	British Columbia
Annual weeks	Prince Edward Island

Source: Survey of Labour and Income Dynamics, 1997

been even wider—\$2,430—the hourly earnings effect. If hourly earnings and annual weeks are standardized, annual earnings were higher in Alberta by \$1,167, because the number of weekly hours was higher. Still, the effects of hourly earnings and annual weeks in Ontario were greater.

The difference in average annual earnings between Ontario and Quebec was \$3,910. Because each of the three components had a lower value in Quebec, no compensatory mechanism was at work. Thus, even

Chart A: Ontario earnings exceeded those in other provinces by up to \$10,000.

Source: Survey of Labour and Income Dynamics, 1997

after comparison on a component-by-component basis, average annual earnings in Ontario were higher. Decomposition shows that almost 50% of the gap was due to lower hourly earnings in Quebec.

Data source and definitions

Data for this study are from the Survey of Labour and Income Dynamics (SLID), a longitudinal household survey that began in January 1993. Every three years some 15,000 households enter the survey and remain for six years. Each year, two detailed questionnaires (one in January covering labour market activity in the previous year, the other in May on income) are completed for household members aged 16 and over. Data used in this cross-sectional analysis are for 1997.

Because the study uses all paid jobs (up to six) held by a person during the year, data are aggregated for people who had more than one job.

Total earnings are obtained directly from the SLID database. Earnings are the sum of wages and salaries from all paid jobs in the year.

Hourly earnings are computed as the ratio of two existing series: total earnings and total hours paid.

Weekly hours are derived from average weekly hours in a given month. Twelve sub-series provide information for

each month of the year. To calculate the average number of hours worked in a week over the year, only those months with more than zero hours are considered. In other words, months with zero hours worked are dropped and the average is calculated over the remaining months.

Annual weeks are derived by dividing total earnings by weekly earnings (which are the product of hourly earnings and weekly hours).

A comparison of average hourly earnings from SLID and other sources, primarily the Labour Force Survey (LFS), shows that SLID-based estimates are about 3% higher. The gap stems from differences in the questions and in the method used to derive hourly earnings. The key difference is that SLID includes overtime pay. Since neither SLID nor the LFS includes overtime hours, SLID rates are higher. Statistics Canada is adjusting the historical SLID data and working with the LFS and the Workplace and Employee Survey to align the concepts, definitions, questions and edits for the future, to maximize consistency across the surveys.

Table 3: Provincial earnings differences

	Average annual earnings	Standardization and decomposition		
		Hourly earnings effect	Weekly hours effect	Annual weeks effect
Ontario (\$)	29,444	28,585	29,239	29,398
British Columbia (\$)	28,327	29,196	28,534	28,376
Difference (\$)	1,117	-611	705	1,022
Contribution (%)	100	-55	63	92
Ontario (\$)	29,444	29,503	27,716	28,818
Alberta (\$)	27,113	27,073	28,883	27,749
Difference (\$)	2,331	2,430	-1,167	1,069
Contribution (%)	100	104	-50	46
Ontario (\$)	29,444	28,403	27,717	28,191
Quebec (\$)	25,534	26,496	27,195	26,709
Difference (\$)	3,910	1,907	522	1,482
Contribution (%)	100	49	13	38
Ontario (\$)	29,444	28,762	26,800	27,140
Manitoba (\$)	23,954	24,533	26,518	26,160
Difference (\$)	5,490	4,229	282	980
Contribution (%)	100	77	5	18
Ontario (\$)	29,444	28,867	25,920	27,050
Saskatchewan (\$)	23,064	23,548	26,559	25,349
Difference (\$)	6,380	5,319	-639	1,701
Contribution (%)	100	83	-10	27
Ontario (\$)	29,444	28,646	25,057	26,899
New Brunswick (\$)	21,865	22,529	26,244	24,249
Difference (\$)	7,579	6,117	-1,187	2,650
Contribution (%)	100	81	-16	35
Ontario (\$)	29,444	28,854	25,726	26,679
Nova Scotia (\$)	22,514	22,992	26,182	25,155
Difference (\$)	6,930	5,862	-456	1,524
Contribution (%)	100	85	-7	22
Ontario (\$)	29,444	27,618	24,425	26,608
Newfoundland (\$)	20,224	21,687	25,054	22,689
Difference (\$)	9,220	5,931	-629	3,919
Contribution (%)	100	64	-7	43
Ontario (\$)	29,444	28,702	23,364	25,821
Prince Edward Island (\$)	19,154	19,736	25,320	22,541
Difference (\$)	10,290	8,966	-1,956	3,280
Contribution (%)	100	87	-19	32

Source: Survey of Labour and Income Dynamics, 1997

Notes: Hourly earnings effect—weekly hours and annual weeks are made identical and only earnings per hour are allowed to differ.

Weekly hours effect—hourly earnings and annual weeks are made identical and only weekly hours are allowed to differ.

Annual weeks effect—hourly earnings and weekly hours are made identical and only annual weeks are allowed to differ.

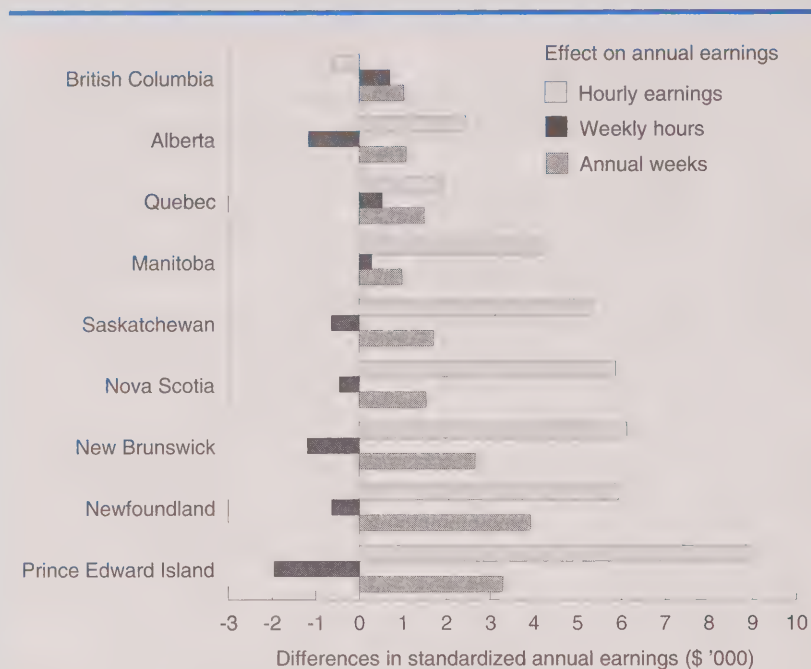
A comparison of Ontario and Manitoba reveals an earnings gap of \$5,490. Once again, each component in Manitoba had a lower value than in Ontario. The decomposition analysis shows that 77% of the earnings difference was due to higher hourly earnings in Ontario. The analysis also suggests that no matter how the average annual earnings in Manitoba are standardized, they were lower than those in Ontario.

The earnings gap between Saskatchewan and Ontario was \$6,380, of which \$5,319 (83%) was due to higher hourly earnings in Ontario and \$1,701 (27%) to that province's annual weeks. However, weekly hours were greater in Saskatchewan, though not enough to counteract the effects of the other two components in Ontario.

A comparison of New Brunswick and Ontario also displays some compensation mechanism. Once again, weekly hours in New Brunswick were higher than those in Ontario. But the effects of higher hourly earnings and annual weeks in Ontario more than compensated for this. The overall average annual earnings difference was \$7,579, of which the major source was higher hourly earnings in Ontario.

An examination of Ontario and Nova Scotia reveals findings similar to those of Ontario and New Brunswick, Saskatchewan and Alberta. The overall earnings difference between the two provinces was \$6,930, of which 85% was due to higher hourly earnings in Ontario. Although weekly hours were higher in Nova Scotia, the effects of hourly earnings and annual weeks in Ontario were greater. As a result, overall average annual earnings were higher in Ontario.

Chart B: Only British Columbia surpassed Ontario in hourly earnings.



Source: Survey of Labour and Income Dynamics, 1997

The Ontario–Newfoundland earnings difference repeats this story. Newfoundland had higher weekly hours, but Ontario's higher hourly earnings and annual weeks led to higher overall average annual earnings. The overall earnings gap between the two provinces was \$9,220, of which the major source was hourly earnings (64%).

Prince Edward Island, too, had higher values for weekly hours. In fact, weekly hours in this province were the highest in Canada. However, average annual earnings were the lowest, owing to hourly earnings. The resulting earnings difference with Ontario (\$10,290) was the highest in the country.

Summary

This study used standardization and decomposition techniques to

analyze average annual earnings in Canada. Earnings were determined as a product of three components: hourly earnings, weekly hours and annual weeks. The analysis shows that average annual earnings vary substantially across the provinces. While Prince Edward Island had the highest average weekly hours among the provinces in 1997, it had the lowest hourly earnings and the lowest average weeks worked. Thus, it was the province with the lowest annual earnings (\$19,200). Ontario had the highest average earnings at \$29,400.

In some cases, average annual earnings would have been lower in Ontario, owing to the effect of one factor (the other two having been made equal—standardized). But the effects of the other two components were so strong that this

province's overall average annual earnings remained highest.

Ontario–Quebec and Ontario–Manitoba were the only cases in which Ontario's values were consistently higher in every component.

These findings are based on comparisons in only one year (1997). Future analyses could consider earnings data for more years to test the robustness of these observations. Furthermore, if the analysis were extended into different dimensions, such as industry or occupation, the components could be broken down—into automotive industry, textile industry, goods manufacturing and service-producing industries, for example, or management, teaching, medicine and health occupations—in order to refine the comparisons between provinces.

Perspectives

Acknowledgements

The author would like to thank Ian Macredie for providing the idea for this article and for commenting on an early draft. He would also like to thank François Gendron, Zhengxi Lin, Serge Lavallée and Don Fraser for their help and advice at various stages. The author would especially like to thank Bruce Rogers for helping to write the final draft. Any mistakes or omissions are the author's responsibility.

Notes

1 See, for example, McInnis (1968), Economic Council of Canada (1977), and Mansell and Copithorne (1986) for discussions, and Day (1989), Coulombe (1997), Coulombe and Lee (1993) and Doiron and Barrett (1992) for analysis.

2 For a description of the decomposition methodology, see Gupta (1993).

Standardization and decomposition²

Are the earnings differences between Ontario and the other provinces related to factors such as hourly wage rates, weekly hours of work, or annual number of weeks worked? This study addresses the question by separating earnings into three components:

Average annual earnings equals average hourly earnings multiplied by average weekly hours multiplied by average number of weeks worked in a year.

Standardization makes it possible to see the effect of each component on provincial differences, by keeping the others constant. Three different sets of standardized differences are generated, the sum of which equals the unstandardized difference.

For example, the hourly wage rate is allowed to vary in two provinces, while weekly hours worked and annual weeks worked are assumed to be identical. The resulting average annual earnings are standardized for weekly hours of work and annual weeks worked.

Decomposition examines the proportional share of each component in the difference between the two populations. For example, for a given \$1,000 difference between two average annual earnings, a certain share is due to a difference in the hourly wage rate, another share to weekly hours of work, and a final share to the number of annual weeks worked.

If

- y = average annual earnings for Ontario
- Y = average annual earnings for the comparison province
- a = average hourly earnings for Ontario
- A = average hourly earnings for the comparison province
- b = average weekly hours for Ontario
- B = average weekly hours for the comparison province
- c = average weeks worked for Ontario
- C = average weeks worked for the comparison province

then the decomposition equation is

$$\begin{aligned}
 y - Y &= \left[\left(\frac{bc + BC}{3} \right) + \left(\frac{bC + Bc}{6} \right) \right] \cdot (a - A) \\
 &+ \left[\left(\frac{ac + AC}{3} \right) + \left(\frac{aC + Ac}{6} \right) \right] \cdot (b - B) \\
 &+ \left[\left(\frac{ab + AB}{3} \right) + \left(\frac{aB + Ab}{6} \right) \right] \cdot (c - C) \\
 &= \text{hourly earnings effect} + \text{weekly hours effect} \\
 &\quad + \text{annual weeks effect}
 \end{aligned}$$

References

- Coulombe, S. *Regional Disparities in Canada: Characterization, Trends and Lessons for Economic Policy*. Working Paper no. 18. Ottawa: Industry Canada, 1997.
- Coulombe, S. and F.C. Lee. *Regional Economic Disparities in Canada*. Working Paper no. 9317E. Ottawa: University of Ottawa, 1993.
- Day, K. *Regional Disparities in Wage and Unemployment Rates in Canada: A Review of Some Issues*. Technical Report no. 51. Ottawa: Bank of Canada, 1989.
- Doiron, D. and G. F. Barrett. *Inequality in Male and Female Earnings: The Role of Hours and Wages*. Discussion Paper no. 92-36. Vancouver: University of British Columbia, 1992.
- Economic Council of Canada. *Living Together: A Study of Regional Disparities*. Ottawa: The Council, 1977.
- Gupta, P.D. *Standardization and Decomposition of Rates: A User's Manual*. Washington: U.S. Department of Commerce, Economics and Statistics Administration, Bureau of the Census, 1993.
- Johnson, J. A., and R.D. Kneebone. *A Quarterly Econometric Model of Provincial Labour Demand*. Research Paper no. 87110. Waterloo: Wilfrid Laurier University, 1987.
- Mansell, R.L. and L. Copithorne. "Canadian regional economic disparities: A survey." In *Disparities and Inter-regional Adjustment*, edited by K. Norrie, 1-51. Collected Research Studies of the Royal Commission on the Economic Union and Development Prospects for Canada, vol. 64. Toronto: University of Toronto Press, 1986.
- McInnis, M. "The trend of regional income differentials in Canada." *Canadian Journal of Economics* 1, no. 2 (May 1968): 440-470.
- Prichard, J. R. S. (with J. Benedickson) "Securing the Canadian economic union: Federalism and internal barriers to trade." In *Federalism and the Canadian Economic Union*, edited by M.J. Trebilcock, J. R. S. Prichard, T.J. Courchene and J. Whalley, 3-50. Papers presented at a conference held at the University of Western Ontario Law School, December 1981. Toronto: University of Toronto Press for the Ontario Economic Council, 1983.
- Shaw, R. P. "Fiscal versus traditional market variables in Canadian migration." *Journal of Political Economy* 94, no. 3 part 1 (June 1986): 648-666.
- Vanderkamp, J. *Mobility Behaviour in the Canadian Labour Force*. Special study no. 16. Ottawa: Economic Council of Canada, 1973.

Help-wanted Index

Benjamin Amoah

The Labour Force Survey (LFS) has, since its inception in 1945, divided the working-age population into three mutually exclusive classifications: employed, unemployed and not in the labour force, according to international standard definitions. From the survey, two well-known labour market indicators—the employment rate and the unemployment rate—are derived and published monthly. What is not available from the LFS is some measure of unmet labour demand—vacant positions that employers would like to fill. One monthly indicator of this is provided by the Help-wanted Index (HWI) (see *Data sources and limitations*).

Since changes in the unmet demand for labour affect hirings, and because changes in hiring affect employment and unemployment levels and rates, the relationships between the HWI and employment and unemployment rates have remained a subject of interest for labour market researchers.

Despite the interest, relatively little has been written about the relationship between the index and these two labour market indicators. Two studies on the subject reached different conclusions (VanBlarcom, 1985; Haggag-Guénette, 1989). The former did not find any association between them, while the latter did.

This article re-examines the association between the HWI and employment and unemployment rates over a later period, 1981 to 1999. Since hirings are the connecting link in the associations, the relationship between the HWI and hirings is also studied. The goal is to determine the extent to which changes in the HWI lead changes in those labour market variables that have a clear functional relationship with changes in employers' intention to hire.

This study uses three criteria to assess the performance of the index. First, it looks for consistency in the manner in which the index tracks or relates to hirings,

employment rates and unemployment rates, three variables that are used to analyze trends in the labour market. Second, it determines the strengths of these relationships, if any. Since the conceptual link between the HWI and hirings is direct, the strongest relationship is expected to exist between these variables. The association with the employment rate may not be as strong, owing to the effect of separations, and that with the unemployment rate will probably be weakest, because the connection is less direct. Finally, the study assesses the lead/lag times between the index and the benchmark variables. The index is expected to be a lead indicator of labour market conditions; that is, changes in the index are expected to signal future changes in the other variables.

The HWI and hirings link

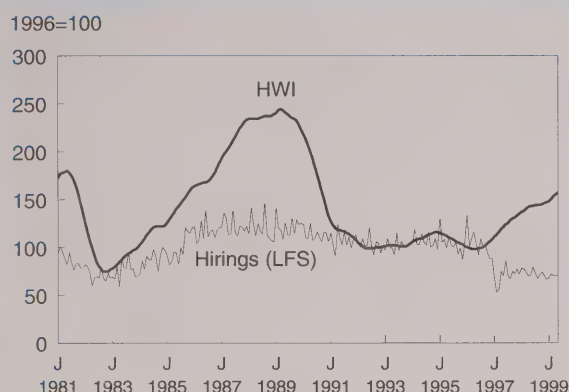
Literature on the empirical relationship between the HWI and hirings is sparse. This study makes use of two sources of hirings data. One source is the monthly job tenure data from the LFS, which can be used as a proxy for hirings. The other source is the annual Longitudinal Worker File (LWF), which measures hirings explicitly.

As mentioned, each hiring fills a vacancy—an unmet labour demand. The more vacancies there are, the more job advertisements are published and the more hirings take place, and vice versa. Thus, one would expect a positive correlation between the HWI and recent hirings.

But is this borne out by the data? For the period 1981 to 1999, a positive relationship existed between the HWI and recent hirings (Chart A).² The cross-correlation coefficients (see *Cross-correlation coefficient*) also indicate a positive relationship, as theory suggests. However, the extent of the association is not as high as expected. This may be explained by data limitations: the use of LFS job tenure as a proxy for monthly hirings and the HWI undercount. Also, as expected, the HWI leads hirings by a couple of months (when

Benjamin Amoah is with the Service Industries Division. He can be reached at (613) 951-0178 or amoabert@statcan.ca.

Chart A: The HWI and LFS recent hirings are very weakly correlated.

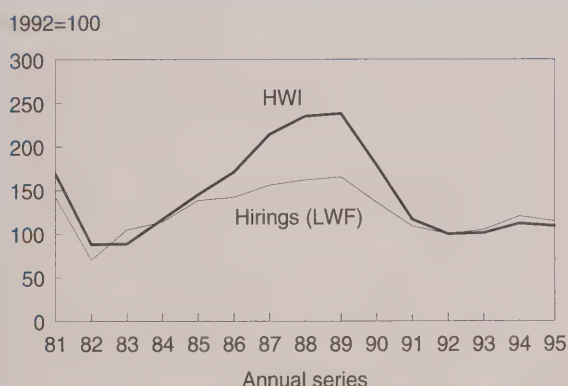


Sources: Help-wanted Index; Labour Force Survey

the cross-correlation coefficient is highest [0.5262]). Not only is the correlation coefficient quite low, but the lead of two months is very weak as well. The correlation coefficients for the other leads are barely distinguishable from that of two months. In fact, the coefficient for a lead of two months and that for a lag of two months are not substantially different.

The relationship between the HWI and annual hirings from the LWF is also positive (Chart B). In fact, the cross-correlation coefficient (0.931) establishes

Chart B: The HWI and LWF hirings are more strongly correlated.



Sources: Help-wanted Index; Longitudinal Worker File

a much stronger relationship than that between the HWI and the LFS recent hirings. No lead/lag periods were identified, primarily because the LWF series is annual and the time between advertisements and hirings is usually less than a year.

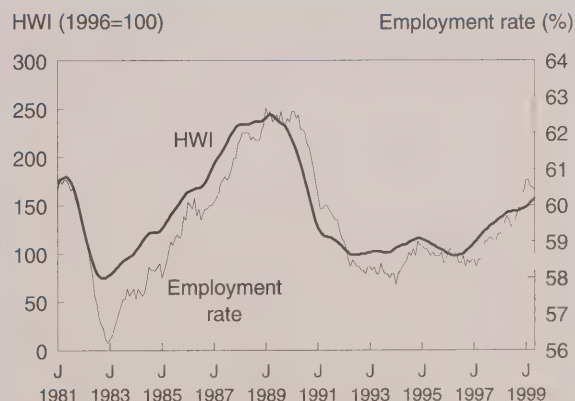
HWI and the employment rate

The employment rate is the percentage of the working-age population (15 years and older) that is employed. Interest in this measure stems from its close relationship with aggregate demand in the economy (Green, 1977). The rationale for this assumption is simple: since the denominator, the working-age population, is relatively stable from month to month, changes in the rate are primarily the result of changes in employment (the numerator). And since the level of, and changes in, employment are generally a function of demand for goods and services, changes in the rate generally reflect changes in aggregate demand in the economy.

Available data suggest a positive relationship in movement between the HWI and the employment rate (Chart C). They also show that the HWI reaches its turning points first. In other words, the HWI roughly leads the employment rate, which is consistent with expectations.

The high cross-correlation coefficients also suggest a close association between the two indicators, as well as a four-month lead by the HWI (the point at which

Chart C: The HWI and the employment rate are closely linked.



Sources: Help-wanted Index; Labour Force Survey

Data sources and limitations

The **Help-wanted Index (HWI)** provides a count of job advertisements published in 22 metropolitan area newspapers. (See Appendix 1 of Statistics Canada [1989] for the list of newspapers used.) Begun in 1973 by the Department of Finance and carried on by Statistics Canada since 1974, the index is patterned after one developed by the Conference Board of the United States in 1964. It is compiled once a month using the Saturday that corresponds to the reference week for the Labour Force Survey, usually the week including the 15th day of the month, and released in the first or second week following the reference month.¹

The HWI tabulates only advertisements placed in the classified sections of selected newspapers, but neglects those in other sections. Furthermore, it does not include government job advertisements or those placed on the Internet (an increasingly popular source) or with private employment agencies. Nor does it capture openings that are filled only through informal contacts (family or friends), which have become an important job search method (Grenon, 1998). It also fails to attach weights to advertisements (in other words, to differentiate between a request for 50 employees and a request for one person). In short, the HWI provides incomplete information on vacancies and hence unmet labour demand. Whatever the degree of undercoverage of the HWI, that is, whatever the error in the estimates of level, what really counts is any bias in the measure of change in the unmet demand for labour. It may well be that the sources of undercoverage in the HWI are fairly constant through time, so the HWI's measures of change are relatively unbiased. And it is this emphasis on timely measurement of change in employers' intention to hire that prompted the production of an index rather than a time series of counts of advertisements.

the coefficient is highest [0.952]). These findings are similar to those for the city of Phoenix in the early 1980s (Friedman, 1982). However, while the correlation with a four-month lead is the highest, those for other leads are almost as high, demonstrating that they are nearly as likely to occur.

HWI and unemployment

The unemployment rate is the ratio of the unemployed (jobless people actively looking for jobs or waiting to start a job in the next four weeks, or those on temporary layoff) to the labour force. Policy makers are interested in this variable mainly because it reflects the interaction between labour supply and demand. An

Job tenure information is from the monthly **Labour Force Survey (LFS)** and has been available since 1976. These estimates measure the length of time between the survey reference week and the start date of the respondent's present job. Because the focus of this analysis is on hires, only employees are considered. For this study, new hires are defined as persons with job tenure of less than one month. The principal problem with this as a proxy for hirings is that it covers only those workers who started with their current employers in the reference month, that is, from the beginning of the reference month to the end of the survey reference week in that month. Because the survey reference week is generally the week including the 15th day of the month, the last day of the reference week can be the 15th of the month or the 21st. This variability in the length of the period over which hirings are measured will introduce a variability in the number of hirings, which will be independent of the volume of hiring taking place.

Job tenure data in the LFS are based only on the main job (no such information exists for the second job). This may lead to an underestimation of the hiring statistics per period. However, since only about 5% of workers are multiple jobholders, the effect on the estimates should not be significant. (For details on concepts, collection methods and data quality, see Statistics Canada [1992].)

The other source of hirings information is the **Longitudinal Worker File (LWF)**. The LWF uses administrative data from Human Resources Development Canada's Record of Employment form and the Canada Customs and Revenue Agency (formerly Revenue Canada) T4 Supplementary file. These hirings represent job vacancies filled during the year. (For details, see Statistics Canada [1998b]).

increasing unemployment rate generally indicates that more people are looking for jobs than jobs are becoming available.

Unlike the employment rate, whose changes are primarily the result of changes in the numerator (employment), changes in the unemployment rate can originate from either the numerator (number unemployed) or the denominator (labour force) or both. Thus, it is possible, in times of improved job prospects, to find increases in employment (due to increases in hires) co-existing with a rising unemployment rate as people return to the labour force. Not surprisingly, volatility in the unemployment rate is higher than that of the employment rate. This tends to affect its relationship with the HWI.

Cross-correlation coefficient

The cross-correlation coefficient (r_{xy}) is a numerical expression of how closely two time series relate to each other. When large values of one series are associated with large values of the other, the series correlate positively. If, on the other hand, large values of one series are associated with small values of the other, the series correlate negatively. When $r_{xy} = 1$ (or -1), it indicates a perfect positive (or negative) fit (correlation) between the two time series. Lead/lag times correspond to the peak (or trough) of the cross-correlation coefficients.

Cross-correlation coefficients: The Help-wanted Index and selected labour market indicators, 1981-1999

Lead/lag (months)	Hires	Employment rate	Unemployment rate	Time span (months)
5	0.5231	0.949	-0.8107	215
4	0.5240	0.952	-0.8155	216
3	0.5258	0.950	-0.8152	217
2	0.5262	0.944	-0.8101	218
1	0.5248	0.933	-0.7997	219
0	0.5224	0.918	-0.7847	220
-1	0.5243	0.898	-0.7659	219
-2	0.5226	0.875	-0.7416	218
-3	0.5204	0.847	-0.7136	217
-4	0.5177	0.817	-0.6818	216
-5	0.5150	0.784	-0.6467	215

Source: Labour Force Survey

At least in theoretical terms, a rise in the HWI will be associated with a future increase in hiring. All things being equal, this results in a drop in the number of unemployed, and consequently, in the unemployment rate. (Conversely, a drop in the HWI would indicate a future drop in hiring and an increase in the unemployment rate.) As such, a negative relationship is expected between the HWI and the unemployment rate. The HWI is also expected to lead the unemployment rate.

Data from the LFS show that increases in the HWI are associated with a fall in the unemployment rate (Chart D). For the period 1981 to 1999, the HWI led the unemployment rate most strongly by four months—the point with the highest cross-correlation coefficient (-0.8155). Other leads also show correlations that are almost as strong. The negative relationship between the two series is clearly evident: as the HWI fell during the 1981-82 and 1990-92 recessions, the unemployment rate increased. Then, as the economy recovered, the HWI rose, employers hired more people, and the unemployment rate fell.

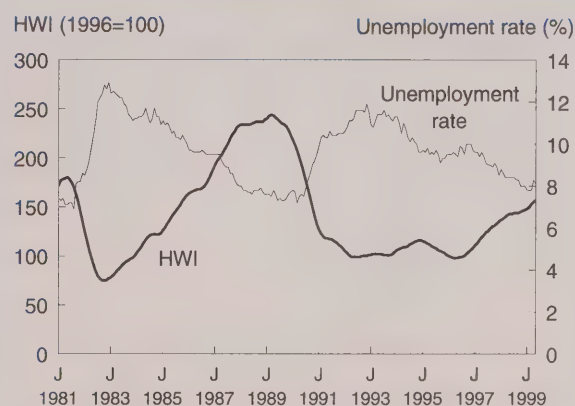
As expected, the relationship between the HWI and the unemployment rate is slightly weaker than that between the HWI and the employment rate. This is shown by the lower cross-correlation coefficients.

Summary

Based on data from the 1980s and 1990s, the HWI appears to be a predictor of labour market conditions. This is consistent with Haggard-Guénette's findings for the 1980s.

Rises in the index imply that in about four months the employment rate should increase. As well, when the HWI rises it takes a similar interval (four months) for it to be reflected in a fall in the unemployment rate—the expected inverse relationship. The index is positively but very weakly associated with hirings, with the dominance of the two-month lead being barely discernible.

Chart D: The HWI and the unemployment rate are inversely related.



Sources: Help-wanted Index; Labour Force Survey

Owing to the theoretical direct relationship between the index and hiring, a much stronger relationship (than between it and the other variables) was expected. However, this was not the case, perhaps because of limitations in the use of LFS job tenure as a proxy for hirings. The strongest relationship was established between the index and the employment rate, followed by the unemployment rate and hirings.

Perspectives

■ Notes

1 For a detailed description of the HWI, its collection, release and revision to construction methodology, see Statistics Canada (1989 and 1998a).

2 The LFS underwent a comprehensive revision in 1997. Since then, the relationship between the index and LFS tenure-based hiring appears to have been affected—as these indicators seem to be moving in opposite directions (that is, they don't exhibit the same trends).

■ References

Friedman, S. K. "The Help-wanted Advertising Index: A leading indicator of the local economy." *Business Economics* 17, no. 3 (May 1982): 61-64.

Green, C. "The employment ratio as an indicator of aggregate demand pressure." *Monthly Labor Review* 100, no. 4 (April 1977): 25-32.

Grenon, L. "Looking for work." *Perspectives on Labour and Income* (Statistics Canada, Catalogue no. 75-001-XPE) 10, no. 3 (Autumn 1998): 22-26.

Haggar-Guénette, C. "Job ads: A leading indicator?" *Perspectives on Labour and Income* (Statistics Canada, Catalogue no. 75-001-XPE) 1, no. 2 (Autumn 1989): 53-63.

Statistics Canada. *Help-wanted Index, 1981-1998*. Catalogue no. 71-540-XIB. Ottawa, 1998a.

---. *Permanent Layoffs, Quits and Hirings in the Canadian Economy, 1978-1995*. Catalogue no. 71-539-XPB. Ottawa, 1998b.

---. *Guide to the Labour Force Survey*. Catalogue no. 71-528-XPB. Ottawa, 1992.

---. *The Help-wanted Index, 1988*. Catalogue no. 71-204-XPB. Ottawa, 1989.

VanBlarcom, B. "The Canadian Help-wanted Index as an economic indicator." Master's thesis. Wolfville, N.S.: Acadia University, 1985.

Payroll taxes—structure and statutory parameters

Zhengxi Lin

Payroll taxes have grown substantially since the early 1980s, levelling off somewhat in the early to mid-1990s (Lin, forthcoming). They have also become an increasingly important source of government revenues. Total tax revenues collected from employers and employees yielded over \$48 billion in 1997, amounting to 14% of total federal and provincial government revenues, up from 8.2% in 1980. Over the same period, total payroll tax revenues rose from 2.8% of GDP to 5.7%; the effective payroll tax rate more than doubled, from \$5.61 per \$100 of wages and salaries to \$12.23; and average annual payroll taxes increased from \$1,650 per employee to over \$4,200 (in 1997 dollars).

Many important issues surround payroll taxes.¹ To provide some background on the subject, this article reviews the structure and statutory parameters of the Canadian payroll tax system; a subsequent article will report on national and provincial trends in the level, growth and role of each component in recent years, and compare Canadian payroll taxes to those of the other G-7² countries.

Canada's payroll tax system

A government levy is considered a payroll tax if and only if it satisfies three conditions: it is legislated, it is related to employment (that is, it refers to earnings or payrolls) and it varies with earnings.³ Many "head-tax" type charges (for example, Ontario's health care premiums

from 1959 to 1989, and Alberta's and British Columbia's health insurance premiums) are not payroll taxes because, although legislated, they are invariant to earnings or payrolls. Likewise, many fringe benefits (for example, employers' contributions to private employee pension plans, and group life insurance) are not payroll taxes because, although they are related to employment and vary with earnings in some cases, they are not legislated.⁴

At present, a total of nine payroll taxes are administered in Canada (Table 1): two by the federal government, one by all provincial/territorial governments, and six by five provincial/territorial governments. The two federal payroll taxes are Employment

Table 1: Payroll taxes in Canada, 1999

Tax	Authority	Contributors	Effective
Employment Insurance	Federal	Employers Employees	1940
Canada Pension Plan*	Federal	Employers Employees Self-employed	1966
Workers' Compensation	Workers' compensation boards	Employers	1910s
Health Services Fund**	Quebec	Employers	1970
Employer Contributions to Vocational Training	Quebec	Employers	1996
Health and Post Secondary Education Tax Levy	Manitoba	Employers	1982
Employer Health Tax†	Ontario	Employers	1990
Health and Post-Secondary Education Tax	Newfoundland	Employers	1990
Payroll Tax	Northwest Territories	Employees	1993

* Workers in Quebec are covered by the parallel Quebec Pension Plan.

** Between 1970 and 1977, the levy was also charged on the net income of employees and the self-employed. These contributions were abolished at the end of 1977. In 1993, another form of individual contributions was introduced.

† The EHT was initially charged on employer payrolls only, but was expanded to cover net self-employment income in 1993. In 1999, the self-employed health tax was abolished.

Zhengxi Lin is with the Labour and Household Surveys Analysis Division. He can be reached at (613) 951-0830 or linzhen@statcan.ca.

Insurance (EI) premiums and Canada and Quebec Pension Plan (C/QPP) contributions. While EI premiums are levied on employees and employers, C/QPP contributions are also levied on the self-employed. The other nationwide tax is for workers' compensation; premiums are levied by all provinces and territories on employers only.⁵ The six provincial/territorial payroll taxes are health services fund contributions levied mostly on employers by Quebec; employer contributions to vocational training also charged by Quebec; a health and postsecondary education tax imposed exclusively on employers by Manitoba; an employer health tax in Ontario; a health and postsecondary education tax levied on employers by Newfoundland; and a payroll tax levied on employees by the Northwest Territories.

Employment Insurance premiums

Since 1940, the federal government has levied a payroll tax on both employees and employers to finance the Employment Insurance (Unemployment Insurance until June 1996) program. The system covers employees only; self-employed workers are excluded unless they are fishermen, who can receive income support during the off season under separate regulatory rules.

Financing arrangements for the program have undergone several rounds of changes, the most significant of which took place in 1990. Earlier, the cost of funding the benefits had been shared by employees, employers and the federal government. Each party was responsible for different components of the total cost at different points under different legislation. Under Bill C-21, which took effect

November 18, 1990, the federal government withdrew its share of contributions and the fund became "self-financing"; responsibility for funding benefits fell to employees and employers.⁶

Since 1972, employee premiums have been calculated as the product of the premium rate multiplied by insurable earnings, up to a maximum. Both the premium rate and the maximum insurable earnings are set by the Canada Employment Insurance Commission, with the approval of the Governor in Council on the recommendation of the Minister of Human Resources Development Canada and the Minister of Finance. As specified by the *Employment Insurance Act*,

"The Commission shall . . . set the premium rate for each year at a rate that the Commission considers will, to the extent possible, (a) ensure that there will be enough revenue over a business cycle to pay the amounts authorized to be charged to the Employment Insurance Account; and (b) maintain relatively stable rate levels throughout the business cycle."⁷

Coverage was universal for employees up to 1978. The job-specific minimum requirement was introduced in 1979. It was set at 20 hours a week *or* 20% of the weekly maximum insurable earnings for 1979 and 1980; 15 hours a week *and* 20% of the weekly maximum insurable earnings between 1981 and 1986; and 15 hours a week *or* 20% of the weekly maximum insurable earnings between 1987 and 1996. Effective January 1, 1997, the Act abolished these minimum requirements and every hour of paid employment became insured. To calculate premiums, the Act also replaced the weekly maximum insurable earnings and premiums with an annual ceiling.

For 1999, the employee premium rate was set at \$2.55 per \$100 of insurable earnings to a yearly insurable maximum of \$39,000. The maximum each employee contributed to the system that year was therefore \$994.50; employers were assessed at 1.4 times the employee premium rate, for an annual maximum of \$1,392.30 per employee (Table 2).

Canada and Quebec Pension Plan contributions

The federal and Quebec governments have also levied a payroll tax on employees, employers and the self-employed to finance the Canada and Quebec Pension Plans (C/QPP) since 1966. The plans are financed on a pay-as-you-go basis (that is, contributions by today's workers finance the benefits of today's recipients). All workers from age 18 to retirement (60 to 70 depending on the year) are covered. Major changes (for example, benefit levels, contribution rates, the contributory base, or the investment of the CPP fund) require the approval of the Parliament of Canada and the governments of at least two-thirds of the provinces with two-thirds of Canada's population.

In 1999, maximum pensionable earnings were set at \$37,400, the basic exemption at \$3,500, and maximum contributory earnings at \$33,900 (Table 3). Employees and their employers each contributed \$3.50 per \$100 of contributory earnings up to a maximum \$1,186.50. Self-employed workers paid both the employee and employer shares of contributions at a combined rate of \$7.00 per \$100 of contributory earnings, for a maximum contribution of \$2,373.

Table 2: Employee* contributions to Employment Insurance, 1972 to 1999

	Premium rate	Minimum coverage requirement**		Weekly maximum		Annual maximum	
				Insurable earnings	Premium	Insurable earnings	Premium
	%	hours	\$		\$		\$
1972	0.90		None	150	1.35	7,800	70.20
1973	1.00		None	160	1.60	8,320	83.20
1974	1.40		None	170	2.38	8,840	123.76
1975	1.40		None	185	2.59	9,620	134.68
1976	1.65		None	200	3.30	10,400	171.60
1977	1.50		None	220	3.30	11,440	171.60
1978	1.50		None	240	3.60	12,480	187.20
1979	1.35	20	or 79.50	265	3.58	13,780	186.03
1980	1.35	20	or 87.00	290	3.92	15,080	203.58
1981	1.80	15	and 83.00	315	5.67	16,380	294.84
1982	1.65	15	and 70.00	350	5.78	18,200	300.30
1983	2.30	15	and 77.00	385	8.86	20,020	460.46
1984	2.30	15	and 85.00	425	9.79	22,100	508.30
1985	2.35	15	and 92.00	460	10.81	23,920	562.12
1986	2.35	15	and 99.00	495	11.63	25,740	604.89
1987	2.35	15	or 106.00	530	12.46	27,560	647.66
1988	2.35	15	or 113.00	565	13.28	29,380	690.43
1989	1.95	15	or 121.00	605	11.80	31,460	613.47
1990	2.25	15	or 128.00	640	14.40	33,280	748.80
1991†	2.25/2.80	15	or 136.00	680	15.30/19.04	35,360	892.84
1992	3.00	15	or 142.00	710	21.30	36,920	1,107.60
1993	3.00	15	or 149.00	745	22.35	38,740	1,162.20
1994	3.07	15	or 156.00	780	23.95	40,560	1,245.19
1995	3.00	15	or 163.00	815	24.45	42,380	1,271.40
1996††	2.95	15	or 150.00	845/750	22.13	39,000	1,150.50
1997	2.90		None		None	39,000	1,131.00
1998	2.70		None		None	39,000	1,053.00
1999	2.55		None		None	39,000	994.50

Source: Human Resources Development Canada

* Employer premiums are equal to 1.4 times employee premiums.

** The weekly coverage requirement applied to each job separately. An employee's collective hours of work/earnings from several jobs could not be used to meet this minimum requirement. Effective January 1, 1997, the minimum was abolished and every hour of work was insured.

† The 2.80% rate took effect July 1.

†† For calculating EI benefits, the maximum weekly insurable earnings were \$845 for the first six months, and then \$750 until the year 2000.

Workers' compensation premiums

All provincial/territorial governments levy workers' compensation (WC) premiums on employers (note that the levy is on employers only, but not all employers are covered) to finance programs run by their respective workers' compensation boards.⁸

Premiums charged to fund WC programs are based on industry groupings and vary according to

the hazard or risk of actual program use. This approach is used in all jurisdictions except Prince Edward Island, Nova Scotia and the Northwest Territories. An employer may have its operation classified into more than one industry with different assessment rates. The system further allows some degree of experience-rating within broad industrial categories, resulting in different assessment rates within the same industry.⁹

Quebec's Health Services Fund

In 1970, Quebec became the first province to levy a tax on employer payrolls as well as on net individual income to help finance its health care system. All employers contributed at the same tax rate until 1998, and the entire payroll of all employers was included in the coverage, with only minor exceptions.¹⁰ The legislated employer tax rate has

seen many increases since its inception. It was initially set at 0.80% of the employer's total payroll, then increased to 4.26% in May 1995 (Table 4).

Between 1970 and 1977, the levy was also charged to both employees and the self-employed. The legislated tax rate was flat (0.8% for

1970 to 1975, 1.2% for 1976 and 1.5% for 1977) and applied to the net income from all sources. The exemption level for married couples was twice that for single persons. And the maximum tax liability for employees differed from that of the self-employed. These non-employer contributions were abolished at the end of 1977.

In 1993, another form of non-employer contributions to the Health Services Fund (HSF) was introduced. This renewed tax differs from the earlier levy in a number of ways. First, the tax base excludes employees' wages and salaries already subject to the employer tax, in addition to a number of items specified in the 1993-94 budget. Second, an exemption of \$5,000 is allowed, but applies to individual taxable income regardless of marital status. Third, although a maximum tax liability still exists, it applies equally to employees and the self-employed. Finally, and more significantly, the tax structure is no longer flat-rated, but now depends upon levels of taxable income: for persons whose taxable income is up to \$40,000, the tax rate is 1.0%, with a maximum contribution of \$150; for those whose taxable income is over \$40,000, the tax liability is equal to \$150 plus 1.0% of the taxable income, up to a maximum contribution of \$1,000.

The 1998 budget introduced a series of graduated contribution rate reductions to small private-sector employers based on their total payrolls. The first round of reductions was introduced in January 1999, the second in January 2000, and the third is set for January 2001 (Table 5). The contribution rate for employers with payrolls \$1 million or less was reduced to 4.00% for 1999, further to 3.22% for 2000 and to 2.70% for 2001—for a total reduction of more than one-third. The extent of HSF contribution relief gradually declines as total payrolls rise; no reduction is granted once total payrolls reach \$5 million.¹¹

Table 3: Employee* contributions to Canada and Quebec Pension Plans, 1966 to 1999**

	Contribution rate	Maximum pensionable earnings	Exemption	Maximum contributory earnings	Maximum contributions
	%			\$	
1966	1.8	5,000	600	4,400	79.20
1967	1.8	5,000	600	4,400	79.20
1968	1.8	5,100	600	4,500	81.00
1969	1.8	5,200	600	4,600	82.80
1970	1.8	5,300	600	4,700	84.60
1971	1.8	5,400	600	4,800	86.40
1972	1.8	5,500	600	4,900	88.20
1973	1.8	5,600	600	5,000	90.00
1974	1.8	6,600	700	5,900	106.20
1975	1.8	7,400	700	6,700	120.60
1976	1.8	8,300	800	7,500	135.00
1977	1.8	9,300	900	8,400	151.20
1978	1.8	10,400	1,000	9,400	169.20
1979	1.8	11,700	1,100	10,600	190.80
1980	1.8	13,100	1,300	11,800	212.40
1981	1.8	14,700	1,400	13,300	239.40
1982	1.8	16,500	1,600	14,900	268.20
1983	1.8	18,500	1,800	16,700	300.60
1984	1.8	20,800	2,000	18,800	338.40
1985	1.8	23,400	2,300	21,100	379.80
1986	1.8	25,800	2,500	23,300	419.40
1987	1.9	25,900	2,500	23,400	444.60
1988	2.0	26,500	2,600	23,900	478.00
1989	2.1	27,700	2,700	25,000	525.00
1990	2.2	28,900	2,800	26,100	574.20
1991	2.3	30,500	3,000	27,500	632.50
1992	2.4	32,200	3,200	29,000	696.00
1993	2.5	33,400	3,300	30,100	752.50
1994	2.6	34,400	3,400	31,000	806.00
1995	2.7	34,900	3,400	31,500	850.50
1996	2.8	35,400	3,500	31,900	893.20
1997	3.0	35,800	3,500	32,300	969.00
1998	3.2	36,900	3,500	33,400	1,068.80
1999	3.5	37,400	3,500	33,900	1,186.50

Source: Human Resources Development Canada

* Employer contributions are equal to employee contributions; self-employed workers pay both the employee and employer contributions.

** Workers in Quebec are covered by the Quebec Pension Plan (QPP). The QPP's contribution parameters are identical to those of the CPP.

Table 4: Quebec's Health Services Fund, 1970 to 1998

Employer contributions		Non-employer contributions			
Effective	Rate	Effective	Rate*	Maximum	
				Employee**	Self-employed
	%		%	\$	
Nov. 1, 1970	0.80	1970 to 1975***	0.8	125	125
June 1, 1976	1.50	1976	1.2	188	300
April 1, 1981	3.00	1977	1.5	235	375
May 2, 1986	3.22				
May 17, 1989	3.36				
April 26, 1990	3.45	Effective	Taxable income†	Tax††	Maximum
Sept. 1, 1991	3.75				
May 10, 1995	4.26 †††		\$		\$
		1993‡	Up to 40,000	1.0%	150
			Over 40,000	\$150+1.0%	1,000

Source: Ministère des Finances, Québec

* This is applied to net income from all sources.

** This is applied to employees whose employment income accounted for at least 75% of net income, and to those over 65.

*** Special rules are applied to workers with low income.

† This excludes wages and salaries and, as of 1994, Old Age Security benefits. It includes income from other sources, as specified in the 1993-94 budget (such as alimony payments and 20% of taxable dividends).

†† The tax liability is calculated by applying the rate to taxable income.

††† Contribution rate reductions to small employers with payrolls under \$5 million were announced in the 1998 budget.

‡ An exemption of \$5,000 is allowed.

Quebec's Employer Contribution to Vocational Training

Effective in 1996, Quebec also levies a payroll tax on employers to help finance its training costs. The flat tax rate of 1% applies to payrolls in excess of the exemption level (\$1 million for 1996, \$500,000 for 1997, and \$200,000 from 1998 onward). Employers' tax liability is reduced by the amount of investment made in government-approved training.

Manitoba's Health and Post Secondary Education Tax Levy

In 1982, Manitoba became the second province to levy a payroll tax to help finance health care and

postsecondary education. The levy is charged to employers only and covers all industrial sectors, with one minor exception.¹²

In the first two years, no relief to small businesses was provided and the full tax rate of 1.5% was applied to the entire payroll. Since 1984, however, a "notch-rated" system has evolved to lighten the tax burden for small and medium-sized employers. The exemption was initially set at \$50,000, and has gradually increased to the present \$1 million (Table 6). At the same time, the "notch maximum" has risen from the initial \$75,000 to the present \$2 million. The "notch rate" (4.5% from 1989 to 1998 and 4.3% in 1999) is applied to the "notch range" (payroll minus exemption) when total payroll is under the "notch maximum." The full tax rate (2.25% between 1987 and 1998, and 2.15% in 1999) is applied to the entire payroll once it exceeds the "notch maximum."

Ontario's health taxes

From 1959 to 1989, Ontario levied health insurance (OHIP) premiums on program participants.¹³ Beginning in 1990, these premiums were abolished and a payroll tax was introduced to help finance health care spending. The Employer Health Tax (EHT) was initially levied on employer payrolls only, but in 1993 coverage was

Table 5: Quebec's Health Services Fund relief to small businesses, 1999 to 2001

Payroll maximum	Tax rate			Reduction
	1999	2000	2001	
\$	%			
1 million or less	4.00	3.22	2.70	36.6
2 million	4.07	3.48	3.09	27.5
3 million	4.13	3.74	3.48	18.3
4 million	4.19	4.00	3.87	9.2
5 million or more	4.26	4.26	4.26	None

Source: Ministère des Finances, Québec

Table 6: Manitoba's Health and Post Secondary Education Tax Levy, 1982 to 1999

Effective	Exemption	Notch maximum	Notch rate	Full rate
	\$		%	
July 1, 1982	None	None	None	1.50
January 1, 1984	50,000	75,000	4.50	1.50
January 1, 1987	100,000	150,000	6.75	1.50
April 1, 1987	100,000	150,000	6.75	2.25
January 1, 1989	300,000	600,000	4.50	2.25
January 1, 1990	600,000	1,200,000	4.50	2.25
January 1, 1994	750,000	1,500,000	4.50	2.25
January 1, 1998	1,000,000	2,000,000	4.50	2.25
January 1, 1999	1,000,000	2,000,000	4.30	2.15

Source: Manitoba Department of Finance

expanded to include net self-employed income (Self-Employed Health Tax [S-EHT]) (Table 7).

The EHT did not allow exemptions and applied to the entire payroll of all employers, with a few exceptions.¹⁴ Relief to smaller businesses was provided through a series of nine graduated tax rates. The bottom rate of 0.98% (about half of the top rate) applied to

employers with payrolls up to \$200,000; subsequent rates gradually increased as payrolls rose; and the top rate of 1.95% applied to employers with payrolls over \$400,000.

To stimulate job creation in the private sector, the 1994 budget announced an EHT "holiday." Since May 1, 1994, all private-sector employers who expand

employment have been exempted from EHT payments on the increased portion of the payroll for a full year. In other words, the EHT is calculated on the previous year's payroll.¹⁵

The S-EHT was based on total net self-employment income (TNSEI), with an exemption of \$40,000 and a different rate structure. The bottom rate of 0.98% applied to self-employed workers with TNSEI up to \$200,000; for those whose TNSEI fell between \$200,001 and \$400,000, a marginal rate of 2.726% applied to the portion above \$200,000; and for those whose TNSEI exceeded \$400,000, the top rate of 1.95% applied. The tax liability of all self-employed workers was reduced by 22% of the calculated amount to compensate for the non-deductibility of S-EHT payments for income tax purposes.

A series of changes to the EHT and S-EHT was announced in the 1996 budget. Among them were the introduction of the \$400,000

Table 7: Ontario's health taxes, 1990 to 1996

Employer Health Tax (EHT)			Self-employed Health Tax (S-EHT)		
Effective	Payroll range	Rate*	Effective	Net self-employment income	Tax**
	\$	%		\$	
1990	Up to 200,000	0.980	1993	Up to 40,000	0
	200,001 to 230,000	1.101		40,001 to 200,000	(income - 40,000) x 0.98%
	230,001 to 260,000	1.223		200,001 to 400,000	1,568 + (income - 200,000) x 2.726%
	260,001 to 290,000	1.344		Over 400,000	(income - 40,000) x 1.95%
	290,001 to 320,000	1.465			
	320,001 to 350,000	1.586			
	350,001 to 380,000	1.708			
	380,001 to 400,000	1.829			
	Over 400,000	1.950			

Source: Ontario Ministry of Finance

* These rates apply to the full payroll for an employer with a payroll within the stated range.

** The tax liability is reduced by 22% of the calculated amount because the S-EHT is not deductible for income tax purposes but EHT payments are.

EHT exemption by 1999, to be available to all private-sector employers and phased in over a three-year period;¹⁶ the setting of an applicable EHT rate according to the pre-exemption payroll level; the abolition of the one-year EHT “holiday,” effective 1997; the increase of the existing S-EHT exemption of \$40,000 to \$200,000 for 1997 and \$300,000 for 1998; the replacement of the old S-EHT rate structure with a flat rate of 1.95% for both 1997 and 1998; the abolition of S-EHT by 1999; and the introduction of the Fair Share Health Care Levy on persons with high income, effective 1996.

The 1998 budget announced two additional changes to the EHT and S-EHT: the advancement of the effective date of the \$400,000 exemption to July 1, 1998, making the exemption for 1998 effectively \$350,000; and the matching of EHT and S-EHT exemptions for 1998.

With 1997 and 1998 as the transition period, the original graduated tax evolved to a completely flat-rated (at 1.95% of total payrolls) system with an exemption of \$400,000, effective January 1, 1999.

Newfoundland's Health and Post-Secondary Education Tax

Newfoundland introduced its payroll tax to help finance health care and postsecondary education in 1990. The tax is levied on employers only. Initially, an exemption of \$300,000 was allowed to all employers,¹⁷ the tax rate was set at 1.5%, and payrolls of all employers except those in the renewable resources sector (fishing, farming and forestry) were covered. Effective July 1992, the exemption level was lowered to \$100,000, the tax rate was raised to 2%, and the previously exempted payrolls of employers in fishing, farming and forestry became taxable at a preferential rate of 1%. The exemption threshold was raised to \$120,000, effective January 1, 1998, and further to \$150,000, effective January 1, 1999.

Northwest Territories' Employee Payroll Tax

The last jurisdiction to enact a payroll tax, the Northwest Territories, did so in 1993. The tax, levied on employees only, is a flat 1% applied to all wages and salaries. Concurrent with the payroll tax, a refundable cost-of-living income tax credit was initiated for year-end residents and paid through personal income tax returns. As a consequence, the payroll tax burden

essentially falls on workers who are not year-end residents of the Territories. The objective is to recover personal income taxes from workers who do not pay the territorial personal income tax.

Conclusion

The payroll tax system in Canada varies considerably among provinces and territories—some jurisdictions levy such taxes while others do not. Also, the number of applicable taxes differs (five in Quebec; four in Manitoba, Ontario, Newfoundland and the Northwest Territories; and three in the rest); and the rates vary from one tax to another and across the country.

The Employment Insurance and Canada and Quebec Pension Plan taxes are based on, but are not proportional to, employees' earnings. The EI tax had a minimum earnings coverage requirement (tax floor) and a tax ceiling prior to 1997; the floor was removed in 1997, but the ceiling is still in force. The C/QPP tax has in place both a floor and a ceiling. For both federal taxes, the statutory rates apply only to the taxable range; earnings below the floor or above the ceiling are not taxed. From the point of view of employers, amounts of EI and C/QPP taxes can be affected not only by individual employees' earnings but also by the overall earnings mix; thus, it is possible for tax liability to vary significantly across different businesses with the same gross payrolls.

The workers' compensation tax is based on total payrolls of the employer, but the applicable rate (for the same level of payroll) can differ from one workers' compensation board to another, and from one industry to another, because of experience rating. The tax liability thus depends upon not only the payroll size of the business, but also its past use of the system, its location, and the industrial mix of its activities.

Quebec's Health Services Fund was a flat-rated levy charged to the entire payroll without exemptions until 1999, when a series of rate reductions was introduced to provide tax relief to small and medium-sized businesses (total payrolls under \$5 million). Its Employer Contributions to Vocational Training levy is also flat-rated, and provides relief to small and medium-sized businesses: employers with total payrolls below the threshold are exempted from the tax. As well, investment in approved training reduces the tax liability.

Manitoba's Health and Post Secondary Education Tax Levy has been "notch-rated" with an exemption to relieve small and medium-sized employers from the tax burden since 1984. Payrolls under the exemption are not taxed; payrolls under the "notch maximum" are assessed for only the "notch range" (the portion of payrolls in excess of the exemption) at the "notch rate"; and only when payrolls exceed the "notch maximum" is the full payroll assessed at the full rate.

Ontario's Employer Health Tax used to cover all payrolls with a series of graduated tax rates—employers with different levels of payrolls were assessed at different contribution rates. Since 1999, the health tax has been fully flat-rated with an exemption.

Newfoundland's Health and Post-Secondary Education Tax not only allows an exemption but also assesses employers in the renewable resource sector (fishing, farming and forestry) at a reduced rate.

Because different bases or different rate structures are used to calculate the amount to be paid across different taxes, analysis of the statutory tax rates is not very meaningful, either across provinces or over time. To overcome the difficulty associated with these differences, a follow-up article in the next issue of *Perspectives* will calculate and compare effective payroll tax rates—total payroll tax revenues collected in each jurisdiction expressed as a proportion of total wages and salaries. In that article, the same base will be used for the calculation of the tax rate across all components, in all provinces/territories and for all years.

Perspectives

Acknowledgements

The author thanks the following for their valuable comments: Nick Constantinidis of Ontario's Ministry of Finance, Charles Duclos of Quebec's Ministère des Finances, Katherine Fraser of Statistics Canada, Wayne Gray of Newfoundland's Department of Finance and Ralph Moshenko of Manitoba's Department of Finance. He is also grateful to John Baldwin, Jonathan Kesselman, Alan Macnaughton, Jack Mintz, Lars Osberg, Garnett Picot and Sylvie Ratté for comments and suggestions on previous drafts.

Notes

- 1 See more detailed discussion in Lin (forthcoming).
- 2 The G-7 countries are Canada, France, Germany, Italy, Japan, the United Kingdom and the United States.
- 3 For more detailed discussions on the characteristics of payroll taxes, see Kesselman (1997, chapters 2 and 5).
- 4 Although the public service superannuation plans may be legislated, they are equivalent to private sector pension plans, so their contributions are not considered a payroll tax.
- 5 WC levies by all provincial/territorial governments are counted here as one national payroll tax, primarily because the objective is the same across all jurisdictions—to fund WC programs. However, unlike EI and C/QPP taxes, WC taxes are independently levied by each jurisdiction; premium rates and methods of operation vary considerably. Wide variations also exist among assessment rates and methods of operation within some jurisdictions.
- 6 Details on financing arrangements are documented in Lin (1998), and in Kesselman (1983) for earlier years.
- 7 See Human Resources Development Canada's website at www.hrdc-drhc.gc.ca/ei/legis/ei3.shtml.
- 8 The Ontario body was recently renamed the Workplace Safety & Insurance Board.
- 9 For further details on the financing of the Canadian WC system, see Vaillancourt (1994).
- 10 Aboriginal employers operating on Indian reserves are exempt from the tax coverage, regardless of whether their employees are Native persons. Since 1986, all employers have been exempt from the tax levy on employees working in international financial and trade businesses.
- 11 If T denotes the contribution rate and M the quotient obtained by dividing an employer's total payroll by \$1 million, the contribution rate for 1999 to 2001 applicable to employers with total payrolls under \$5 million is calculated as the following:
$$T^{1999} = (0.063\% \times M^{1999}) + 3.941\%;$$
$$T^{2000} = (0.258\% \times M^{2000}) + 2.966\%; \text{ and}$$
$$T^{2001} = (0.390\% \times M^{2001}) + 2.310\%.$$
- 12 The calculated rates are rounded to the second decimal place. For more details see Quebec (1998).
- 12 Payrolls of commercial truckers associated with out-of-province activities have been exempted from the tax since 1988. This exemption was extended to all remuneration directly related to interprovincial and international transportation in 1991.

13 An estimated 65% of OHIP premiums were paid by employers on behalf of their employees as fringe benefits (Dahlby, 1993).

14 Exempted are payrolls of foreign embassies and consulates, and Native employers operating on Indian reserves.

15 To ensure that employers do not take advantage of this policy for tax planning, a number of measures have been applied: only new employers do not have to pay EHT in their first year of operation; employers that have purchased, sold or reorganized a business or part of a business must factor in the payroll of the old entity in the comparison of both years' payrolls; and associated employers and employers with more than one account must aggregate their payrolls before doing year-over-year comparisons.

16 Associated employers must agree to share only one exemption among them. The exemption is \$200,000 for 1997; \$300,000 for 1998; and \$400,000 for 1999 onwards. The exemption for part-year employers is prorated by the number of days in which the business is in operation. Public-sector employers currently excluded from the one-year EHT holiday on increases in payroll are not eligible for the exemption.

17 Associated employers were entitled to only one exemption among them.

■ References

Dahlby, B. "Payroll taxes." In *Business Taxation in Ontario*, edited by A. Maslove, 80-170. Toronto: University of Toronto Press, 1993.

Kesselman, J. R. *General Payroll Taxes: Economics, Politics, and Design*. Canadian Tax Paper no. 101. Toronto: Canadian Tax Foundation, 1997.

---. *Financing Canadian Unemployment Insurance*. Canadian Tax Paper no. 73. Toronto: Canadian Tax Foundation, 1983.

Lin, Z. "Payroll taxes in Canada revisited: structure, statutory parameters, and recent trends." *Canadian Tax Journal*, forthcoming.

---. "Employment Insurance in Canada: Recent trends and policy changes." *Canadian Tax Journal* 46, no. 1 (April 1998): 58-76. Also available as an analytical report published by Statistics Canada (Catalogue no. 11F0019MPE, no. 125). Ottawa, 1998.

Lin, Z., G. Picot and C. Beach. "What has happened to payroll taxes in Canada over the last three decades?" *Canadian Tax Journal* 44, no.4 (October 1996): 1052-77. Also available as an analytical report published by Statistics Canada under the title *The Evolution of Payroll Taxes in Canada: 1961-1993* (Catalogue no. 11F0019MPE, no. 90). Ottawa, 1996.

Quebec. Ministère des Finances. *Bulletin d'information* 98-8, Québec, December, 1998. Also available at www.finances.gouv.qc.ca.

Vaillancourt, F. *The Financing of Workers' Compensation Boards in Canada: 1960-1990*. Canadian Tax Paper no. 98. Toronto: Canadian Tax Foundation, 1994.

Are you moving?

Please forward your name, old address, new address, telephone number and client reference number to: **Statistics Canada, Operations and Integration Division, Circulation Management, 120 Parkdale Avenue, Ottawa, Ontario K1A 0T6**; or call (613) 951-7277 or 1 800 700-1033 toll free, or fax (613) 951-1584.

Please allow four weeks notice to ensure uninterrupted delivery.

Income taxes in Canada and the United States

Michael Wolfson and Brian Murphy

Income taxes¹ in Canada and the United States continue to attract widespread interest. Much popular discussion of comparative tax rates is based on federal statutory income tax rates, those formally enshrined in law. But taxes actually paid are often substantially different from the statutory rates because of various tax deductions, credits, surtaxes, payroll taxes, and differences among state and provincial income taxes (see *Statutory and effective tax rates*). In order to have a more accurate picture of taxes actually paid—effective rather than statutory tax rates—this analysis uses the most recent detailed sample data from the two countries (1997) to compare income taxes paid by individuals and families (see *Data sources and definitions*).

On average, effective income tax rates for Canadian families in 1997 were higher than those of U.S. families.² However, the rates varied considerably within each country for families with similar incomes, reflecting variations in family circumstances other than income, as well as the myriad provisions of tax systems over and above the structure of nominal tax rates.

Average tax rates higher in Canada

Because both countries' income tax systems are generally progressive, with higher income families paying tax at higher average rates, this study divides families on both sides of the border into groups with similar incomes. Meaningful comparisons of incomes require the use of Canada-U.S. purchasing power parities (see *Purchasing power parity*)—\$0.79 in 1997—to adjust the American data.

Michael Wolfson is Director General of the Analysis and Development Branch. He can be reached at (613) 951-8216 or wolfson@statcan.ca. Brian Murphy is with the Social and Economic Studies Division. He can be reached at (613) 951-3769 or murphy@statcan.ca.

Statutory and effective tax rates

Statutory rates for personal income taxes are those prescribed in a jurisdiction's income tax act. For example, the top federal income tax rate in Canada is 29%. However, the rates in various tax brackets are not an accurate indication of the rates actually paid. For example, on top of this basic rate, provinces in Canada also levied income taxes between 44.5% (Alberta) and 69% (Newfoundland) of the basic federal tax rate in 1997. Correspondingly, most American states levy their own income taxes, with 27 states charging a percentage of federal tax or federal taxable income. Eight states levy no personal income tax.

In addition, jurisdictions have a variety of surtaxes and tax credits. More importantly, income tax rates are graduated, so that an initial portion of income is generally not taxed at all, and subsequent levels are taxed at increasing rates, corresponding to the dollar limits for each tax bracket. As a result, the average rate of tax paid is always lower than the combined federal plus provincial or state statutory tax rate on the last dollar of income.

This analysis is concerned with actual taxes paid, rather than statutory tax rates. The basic measure used, therefore, is the effective average tax rate, defined simply as the ratio of total taxes paid to total income per family.

A distribution of Canadian and U.S. families by comparable income groups shows that Canada had proportionally fewer families with either high (\$100,000 or more) or low (less than \$10,000) incomes in 1997 (Table 1). The United States had almost 50% more families in the lowest income group: 10.9%, compared with 7.3%. At the same time, it had about three times as many families in the top income group: \$150,000 or more.

U.S. families in the highest income group paid about 5.2% less of their total income in income taxes than did comparable Canadian families in 1997. On the other hand, for the almost one-third of families with incomes of less than \$25,000, American families paid the same proportion or more of their incomes in taxes.

Data sources and definitions

Taxes include federal, and provincial or state income taxes, plus payroll taxes paid by employees. In Canada, payroll taxes are Employment Insurance premiums and Canada or Quebec Pension Plan contributions; in the United States, Social Security taxes finance old age security, disability and retirement pensions, and Medicaid benefits.

Total income comprises earnings from employment and self-employment, investment income, pension and other income, and government cash transfers. In Canada, this is the definition used by the Survey of Consumer Finances. To the standard American definition of total income (used by the Current Population Survey) this study has added the cash value of food stamps, the Low Income Heat and Energy assistance program credit, and the Earned Income Tax Credit.

Taxpayers in this analysis are family units, or families for short. These include unattached individuals, couples with or without children, lone parents, and generally any group of individuals related by blood, marriage or adoption living in the same dwelling. This definition applies to both the U.S. and Canadian data. (The use of the term family is not the usual Statistics Canada one, since it includes unattached individuals.)

For Canada, the data are from Statistics Canada's Survey of Consumer Finances for 1997, with imputed payroll taxes added. For the United States, the data are from the Census Bureau's March supplement to the Current Population Survey microdata file for 1997.

In the \$25,000-to-\$49,999, the \$50,000-to-\$99,999 and the \$100,000-to-\$149,999 income groups, U.S. families paid on average 4.4%, 5.3% and 3.8% less, respectively, of their income in income and payroll taxes than did comparable Canadian families. For example, Canadian families with \$40,000 paid about \$6,900 in tax, compared with \$5,200 in the United States. Similarly, for families with \$70,000, average amounts of tax paid were \$17,000 and \$13,300, respectively.³

Effective tax rates vary within income groups

Underlying these average effective tax rates in each income group, however, are many provisions in both countries intended to adjust taxes to particular circumstances. In some cases, these provisions are meant to reflect differences in "ability to pay," such as differ-

Table 1: Families by income group, and their average effective tax rates

Income (1997 C\$)	Proportion of families		Average effective tax rate*	
	Canada	U.S.	Canada	U.S.
	%			
All families	100.0	100.0	16.4	13.8
Less than 10,000	7.3	10.9	1.0	2.3
10,000 to 24,999	24.8	21.1	6.2	6.2
25,000 to 49,999	30.4	27.3	17.3	12.9
50,000 to 99,999	29.9	26.5	24.3	19.0
100,000 to 149,999	5.9	8.6	27.9	24.1
150,000 or more	1.8	5.7	32.8	27.6

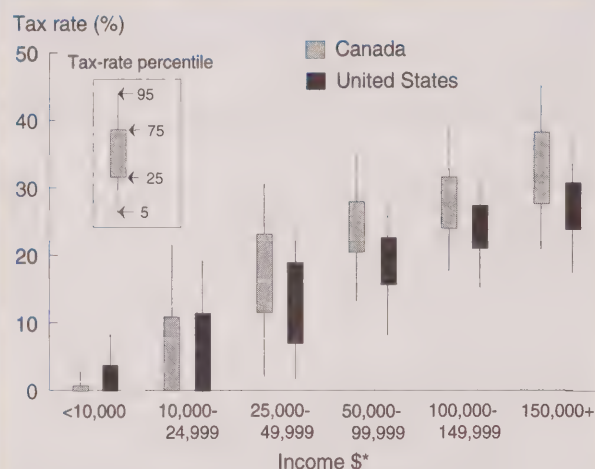
Sources: Survey of Consumer Finances; U.S. Current Population Survey

* The ratio of taxes paid to total income for each family is averaged (using the sample weights) over all the families in the income group. Generally, such an "average of ratios" is lower than the "ratio of averages," which takes total taxes paid by all families in a given income group, and divides it by total income received by these families.

ences in family size. In other cases, the different tax rates arise from basic differences in tax structure (such as joint filing for spouses), different incentive or tax expenditure provisions (for example, RRSPs in Canada, or mortgage interest deductibility in the United States), and variations in the extent of take-up for these tax provisions among families. As a result, the actual amount of income tax paid by any one family depends on a number of factors, including the number of dependants, the way total income is divided among family members, and the kinds of deductions and tax credits members of the family are able to claim.

This dispersion is shown graphically (Chart). The vertical axis is the effective federal plus provincial or state income tax rate, while the horizontal axis shows family income groups.

In order to derive the various tax rates shown, the study sorted families into income groups. Then, within each income group, it sorted families by their effective tax rates. Finally, it extracted families at precisely the 5th, 25th, 75th and 95th percentile positions along this range of effective tax rates. For example, the 75th percentile tax rate partitions families in a given income group into the three-quarters with lower effective tax rates and the one-quarter paying tax at higher rates.

Chart: Effective tax rates in Canada and the United States

Sources: Survey of Consumer Finances; U.S. Current Population Survey

* Purchasing power parity adjusted C\$

In both countries at least one-quarter of all families in the \$10,000-to-\$24,999 group paid no income tax. On the other hand, 95% of families with incomes of \$150,000 or more paid taxes amounting to at least 21% of their income in Canada, and at least 18% in the United States.

In the \$50,000-to-\$99,999 income group, the middle 90% of families (that is, excluding the top

and bottom 5% in terms of effective tax rates) faced rates spanning a range of 21.7 percentage points in Canada, compared with 19.9 points in the United States (Table 2). To illustrate, for families with \$70,000 the range of effective income taxes paid (with the top and bottom 5% of all tax rates trimmed off) would be \$15,200 in Canada, and \$13,900 in the United States.

Table 2: Ranges of effective income tax rates covering 90% of families within each income group

	Income (1997 C\$)					
	<10,000	10,000-24,999	25,000-49,999	50,000-99,999	100,000-149,999	150,000+
	%					
Canada	3.8	21.7	28.7	21.7	21.3	24.2
United States	8.3	19.2	23.3	19.9	16.2	19.9

Sources: Survey of Consumer Finances; U.S. Current Population Survey

Purchasing power parity

Purchasing power parity (PPP) is the price in local currencies of the same basket of goods and services. According to Statistics Canada's bilateral Canada-U.S. PPPs (those for personal expenditure rather than GDP overall) (Statistics Canada, 1999; Kemp, 2000), \$79 U.S. dollars spent by an American household in 1997 was equivalent in purchasing power to \$100 Canadian dollars spent here.

This "purchasing power" exchange rate is considerably higher than the market exchange rate, which averaged US \$0.725 in 1997. One reason is that many of the goods and services purchased by Canadians (recreation, food and drugs, for example) do not cross the border, and actually cost less in Canada than they would if they were imported from the United States at the official exchange rate. Another reason is that the official exchange rate is influenced by many factors of little direct relevance to consumers, such as world prices for raw materials.

Summary

Income taxes in both Canada and the United States are generally progressive. Families in both countries pay these taxes at higher effective rates as income increases.

Also, effective income tax rates in the United States tend to be lower than in Canada, income group by income group, for the two-thirds of families with incomes of \$25,000 or more. On the other hand, families in the lowest income group (under \$10,000) south of the border paid over a percentage point more as a proportion of their incomes (2.3% versus 1.0%). Families in the \$10,000-to-\$24,999 income group were taxed similarly in the two countries.

Finally, the range of effective tax rates paid within income groups in each country was generally quite wide. For example, the range for 90% of families in the \$25,000-to-\$49,999 group was roughly 25

percentage points. At the same time, differences in the *average* rate paid in this income group were about 4.5 percentage points. These relatively wide ranges in effective tax rates within income groups reflect the heterogeneity of family circumstances, as well as the complexities of the tax structures in the two countries.

Perspectives

■ Notes

1 Income tax is used as a shorthand for personal income and employee-paid payroll taxes. Other taxes, such as the employer-paid portion of payroll taxes, corporate income, property and sales taxes, are not considered in this analysis, mainly because they are not included in the available data. Also, it could be argued that the payer of a tax is not necessarily the one who bears the ultimate burden of the tax. The estimation of such tax incidence is beyond the scope of this analysis.

2. This study uses “families” to refer to both unattached individuals and families with two or more members.

3. In other words, these figures are the result of multiplying the illustrative incomes of \$40,000 and \$70,000 by the corresponding average effective tax rates shown in Table 1.

■ References

Kemp, K. “Purchasing power parities and real expenditures, United States and Canada—An update to 1998.” *National Income and Expenditure Accounts*, Quarterly Estimates Third Quarter 1999. (Statistics Canada, Catalogue no. 13-001-XPB) 47, no. 3 (February 2000): 98-138.

Statistics Canada. *The Daily*. Catalogue no. 11-001-XPE. Ottawa, November 30, 1999.

Knowledge workers on the move

John Zhao, Doug Drew and T. Scott Murray

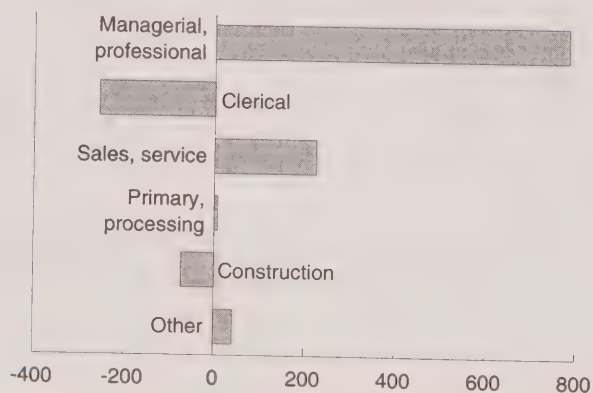
The Canadian economy experienced a rapid increase in the demand for skills and specialized knowledge in the 1990s (OECD, HRDC and Statistics Canada, 1998). Virtually all job creation occurred in knowledge-based occupations—professional, managerial and technical. The employment rate (that is, the percentage employed) among highly educated persons is much higher than that among people with less education, and this gap is widening. Between 1989 and 1998, knowledge-based occupations gained 780,000 workers, while employment in most other occupations declined. The employment rate of people with Grade 8 education or less fell from 60% in 1989 to less than 50% by 1998. On the other hand, the employment rate of people with a university education held steady at about 87%, even during the recession of the early 1990s (Chart A).

Partly in response to this growing demand for skills and education in the labour force, Canada has made huge additions to its stock of human capital (Chart B). Students who move from the educational systems to the labour market are relatively highly qualified, compared with other countries' or previous Canadian cohorts. Canada does not suffer from any large-scale skill shortages at the aggregate level (Gingras and Roy, 1998). However, this success comes at a cost: in 1995, Canada spent 7.0% of gross domestic product (GDP) on education, well above the mean of 5.6% for OECD countries (OECD, 1998).

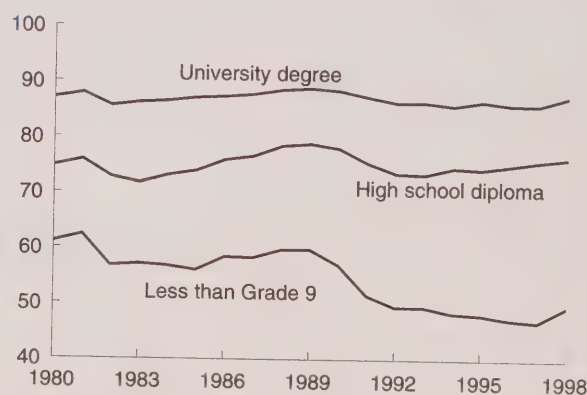
Despite this positive picture at the aggregate level, it is clear that imbalances between supply and demand exist in particular industries and occupations. For example, the Software Human Resources Council of

Chart A: The education premium is large and growing.

Change in full-time employment, 1989-1998 ('000)



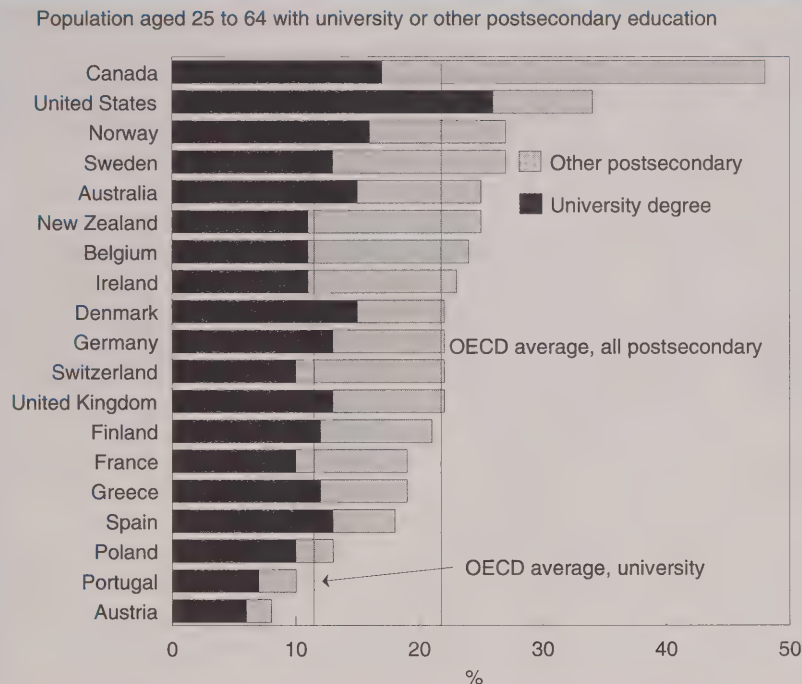
Employment rate, persons aged 25 to 44 (%)



Source: Labour Force Survey

Adapted from an article in *Education Quarterly Review* (Statistics Canada, Catalogue no. 81-003-XPB) 6, no. 3 (Spring 2000). John Zhao and Doug Drew are with the Centre for Education Statistics. They can be reached at (613) 951-1531 or john.zhao@statcan.ca and (613) 951-9039 or doug.drew@statcan.ca, respectively. T. Scott Murray is Director General of the Institutions and Social Statistics Branch. He can be reached at (613) 951-9035 or scott.murray@statcan.ca.

Chart B: Canadians are highly educated, compared with people in other OECD countries.



Source: Organisation for Economic Co-operation and Development, 1996

Canada estimated a shortage of 20,000 computer programmers (Parsons, 1996), paralleled by an estimate of 190,000 vacancies in the information technology sector in the United States (Miller, 1997).

Emigration from Canada

Traditionally, most people leaving Canada for the United States applied for permanent immigration. Temporary visas had limitations, such as restrictions on the number of renewals possible.

However, under the North American Free Trade Agreement (NAFTA), Canadian workers in qualifying professional occupations can readily gain entry into the United States, needing only to show proof of their qualifications and a

job offer from an employer in the United States. Furthermore, while a NAFTA visa is valid for one year, the maximum number of renewals is unlimited. Hence, more people may be remaining in the United States for an extended period of time without converting to permanent resident status. One might expect that a large increase in temporary migration (if it were a precursor to staying on in the United States) would eventually lead to a noticeable increase in permanent migration to the United States. The data on permanent emigration suggest that such conversions are not yet taking place on a large scale.

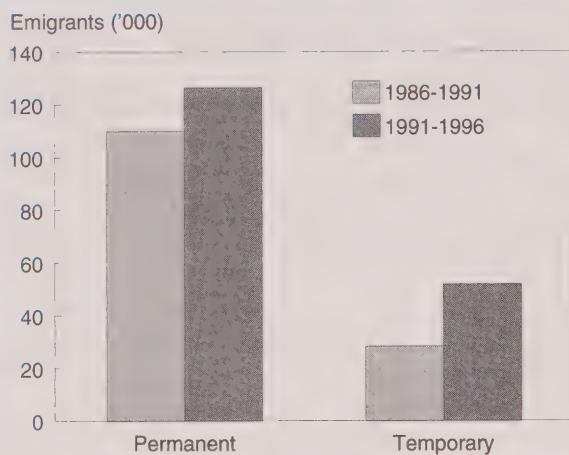
For these reasons, it is important to examine both permanent and temporary migration when estimat-

ing the magnitude and characteristics of outflow from Canada to the United States. The U.S. Immigration and Naturalization Service (INS) provides reliable information on permanent migration from Canada to the United States. However, its data on temporary migration, while meeting the administrative purposes for which they were designed, do not provide a reliable count of people arriving on a temporary basis (see *Data sources* and *Data limitations*).

According to Statistics Canada's Reverse Record Check (RRC), an estimated 178,000 people left Canada between 1991 and 1996 and were residing in the United States in 1996. Of these, 126,000 people expected to remain permanently in the United States, and an estimated 52,000 expected to return to Canada. The implied annual average emigration of people continuing to reside in the United States from 1991 to 1996 would be around 35,000, of which 70% expected to be permanent. Emigration was about 30% higher than during 1986 to 1991. Permanent emigration increased by an estimated 15%, while temporary emigration doubled (Chart C).

Canadian tax data provide estimates of the number of taxfilers leaving Canada to all destinations during the 1990s.¹ The number of taxfilers who left Canada, whether permanently or temporarily, has increased steadily in recent years, from about 15,400 in 1991 to 28,900 in 1997, with an average of 21,700 per year (Chart D). The only information available on the destination of a mover is the country from which the tax return is filed, including Canada. (Some filers may have used an accountant's or a relative's address in Canada to file

Chart C: Temporary emigration to the United States doubled in the 1990s.



Sources: Reverse Record Check; Census of Canada, 1991 and 1996

their tax returns even though they were no longer residents of the country, or they may have returned to Canada by the time of filing.) Assuming that all taxfilers who filed from either a Canadian or U.S. address had moved to the United States yields an upper bound for this group. The lower bound corresponds to half

Chart D: Taxfiler data indicate increasing emigration in the 1990s.

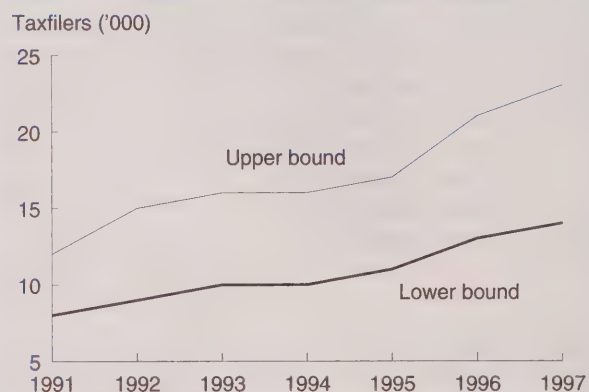


Source: Small Area and Administrative Data Division

of taxfilers going to all destinations; this is based on RRC estimates showing that between 1986 and 1996, half of all permanent emigrants moved to the United States.

Based on the above assumptions, the number of Canadian taxfilers who moved to the United States can be estimated in the 8,000-to-12,000 range in 1991, increasing to the 14,000-to-23,000 range by 1997 (Chart E).

Chart E: Estimated emigration to the United States increased in the 1990s.



Source: Small Area and Administrative Data Division

From the averages of the lower and upper bounds between 1991 and 1997, the average emigration of taxfilers from Canada to the United States is estimated to be between 11,000 and 17,000. Since the taxfiler data on movers show a one-to-one ratio between filers and dependants, the average annual emigration to the United States is probably between 22,000 and 34,000 over this period.

Estimates from all three data sources are consistent, placing annual average emigration to the United States in the 1990s in the 22,000-to-35,000 range. This is about 0.1% of the Canadian population—much smaller than that experienced historically. Nevertheless, taxfiler data do suggest an upward trend in total emigration (both permanent and temporary) in the 1990s.

Data sources

Canadian personal taxation data: Everyone receiving income from Canadian sources is required to file a Canadian tax return, including people leaving Canada during the tax year in question. For those moving from Canada, the date of departure but not the destination is noted on the tax form. In order to capture a full year's income for movers in 1996 (the most recent year for which such data are available), it is necessary to consider those who also filed tax returns in 1995. About 96% of 1996 movers had done so.

Reverse Record Check (RRC): The RRC is used by Statistics Canada to estimate coverage in the Census of Population. The 1996 RRC sample included people residing in Canada at the time of the 1991 Census, as well as people entering Canada since then. Sampled individuals were contacted to establish where they resided at the time of the 1996 Census. Those living in Canada ought to have been included in that census; hence, among this group, those who were missed provide an estimate of undercoverage. A by-product of the RRC is an estimate of people who were living in Canada at the time of the 1991 Census or who entered Canada between 1991 and 1996 and were residing in the United States at the time of the 1996 Census. The survey asks those who had moved south whether they had done so on a permanent or temporary basis.

Permanent movers are people who, at the time of the census, had left Canada with no intention of returning, as well as those who had resided outside Canada for at least two years but whose intentions about returning were unknown. **Temporary** movers are people who, at the time of the census, had resided outside Canada for at least six months with the intention of returning, or had resided

outside Canada for no more than two years if their intentions were unknown.

The Landed Immigrant Data System, developed by Citizenship and Immigration Canada, is a principal source of data on immigration to Canada. Its files hold information on the education and work experience of immigrants at the time of arrival in Canada, which in turn suggests their intended occupation.

Canada's 1991 and 1996 **Censuses** are also used in this study. The censuses include variables on immigration status, year of immigration, educational attainment, occupation and income. The Demography Division of Statistics Canada produces historical data on Canadian immigration and emigration.

Current Population Survey (CPS): The CPS is a monthly survey of U.S. labour market conditions, carried out by the Bureau of the Census on behalf of the Bureau of Labor Statistics. Since 1994, a March supplement has profiled the characteristics of foreign-born residents of the United States. This survey provides the number of Canadian-born people who entered the United States during the 1990s and were still living there each year from 1994 to 1999. The CPS includes only people whose usual place of residence for a period of six months or longer is the United States.

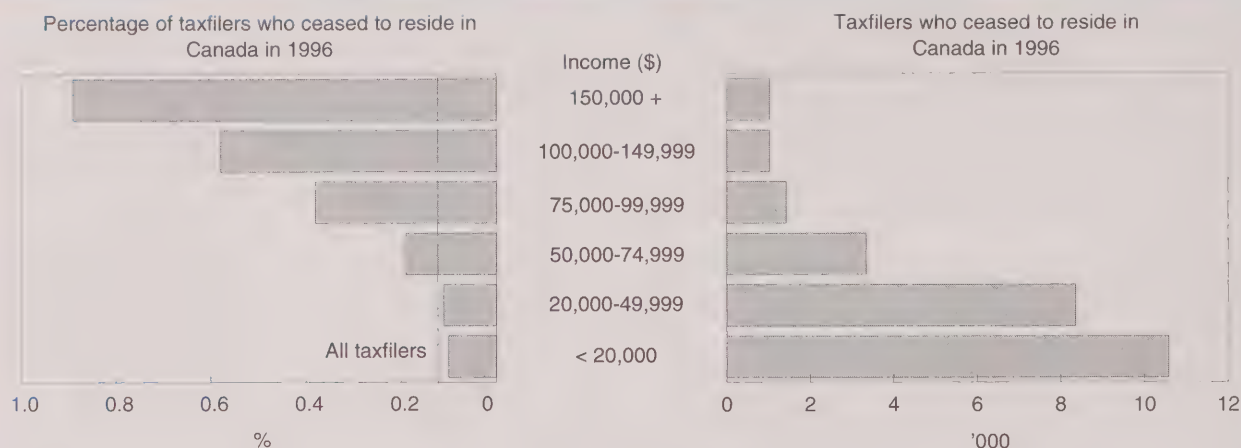
U.S. Immigration and Naturalization Service (INS): The INS publishes numbers of both permanent and temporary visas issued to migrants to the United States, by country of origin. The data on permanent migration provide not only a reliable count of permanent migration from Canada to the United States, but also information on the occupation of the migrants.

Emigrants tend to be young, well-educated and high earners

Close to 10,000 of those who left Canada in 1996 were aged 25 to 34, while another 7,000 were aged 35 to 44; together they accounted for about two-thirds of those who left, compared with only 44% of all taxfilers. Some 4,000 people aged 45 to 54 left, representing the same share of movers (12%) as of all taxfilers.

Recent migrants to the United States possessed high levels of education—higher than those of the native-born population remaining in Canada or of recent Canadian immigrants. Among migrants to the United States aged 16 and over, for the period 1994 to 1999 nearly half (49%) had a university degree. From the 1996 Census, comparable figures were 12% for Canadian-born residents and 21% for 1990s immigrants to Canada.

While movers represented only 0.1% of all taxfilers, they were over-represented among those with higher incomes. For example, taxfilers who left Canada represented 0.9% of those reporting incomes of \$150,000 and over, and close to 0.6% of those with incomes between \$100,000 and \$149,999 (Chart F). In other words, movers were seven times as likely as *all* taxfilers to have incomes \$150,000 and over (4.0% of movers versus 0.6% of all

Chart F: Top income earners leave in higher proportions, but in relatively small numbers.

Source: Small Area and Administrative Data Division

taxfilers). Similarly, they were five times as likely to have incomes between \$100,000 and \$149,999 (4.0% of movers versus 0.9% of all filers).

Of the 26,000 who left, about 19,000 had incomes of less than \$50,000 in 1995, about 5,000 had incomes between \$50,000 and \$99,999, and a further 2,000 had incomes of \$100,000 or more.

Permanent emigration

As a share of population, both permanent immigration (from all countries) and emigration (to all countries) have decreased in the last 100 years (Chart G). Permanent emigration per annum represented more than 1% of the Canadian population early in the century. By the 1930s it had dropped to about 0.35%, holding steady through the 1960s. By the 1990s, permanent emigration had fallen to 0.15% of the population.

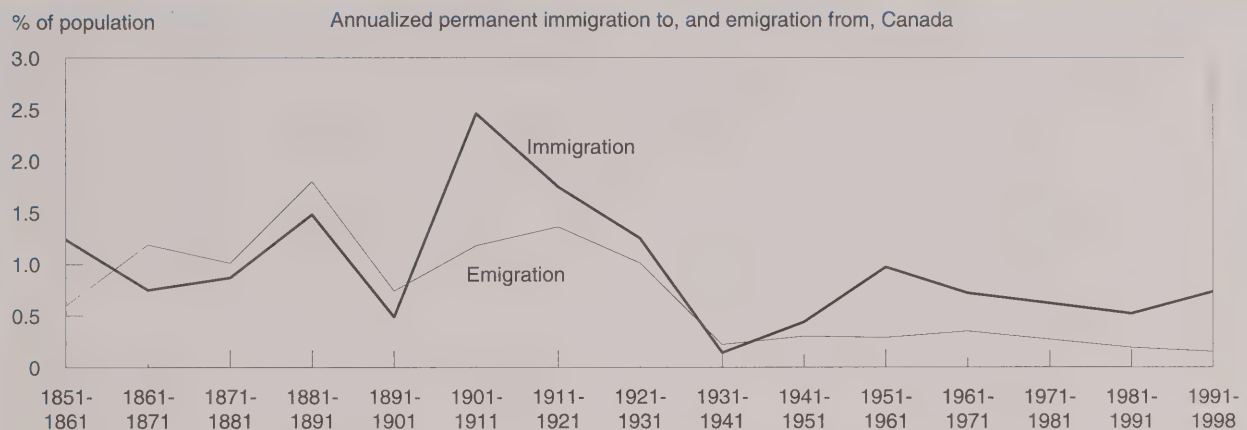
The only information available on total emigration (including both permanent and temporary) from Canada to all countries is that derived from the Reverse Record Check of the 1991 and 1996 Censuses. Annual total emigration from Canada represented 0.22% of the population between 1986 and 1991, increasing to 0.27% between 1991 and 1996. Despite the small increase in the first half of the 1990s, emigration over this period was the lowest in Canadian history.

Who leaves for the United States?

In 1996 and 1997, permanent emigration to the United States was equivalent to only 0.07% of the overall Canadian workforce.² Despite increases in knowledge-based occupations, permanent emigration³ was small relative to the stock of workers in Canada. Physicians, nurses, engineers and scientists had the highest levels of emigration relative to the stock; however, these levels were less than 1% annually (Chart H).

During the 1990s, Canada's largest net losses of knowledge workers to the United States were in the health professions, followed by engineering and managerial occupations (Chart I). Physicians left at a ratio of 19 to 1, nurses, 15 to 1, and engineers and managerial workers, 7 to 1.

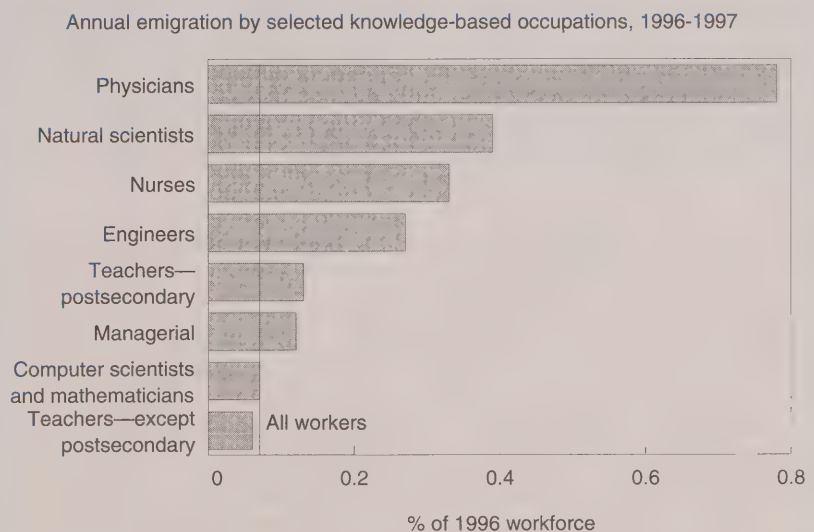
An average of about 150 physicians emigrated to the United States per year during the late 1980s, increasing to 450 per year in 1996 and 1997. Departing nurses increased from 330 per year in the late 1980s to about 750 in the early 1990s, and to 825 in 1996 and 1997. Permanent emigration of those in other knowledge-based occupations increased between the late 1980s and early 1990s, before decreasing somewhat in 1996 and 1997.

Chart G: Immigration and emigration are proportionately smaller today.

Source: Demography Division

Relative to the supply of new graduates, the annual loss of physicians and nurses in recent years has been large. In 1996 and 1997, the annual outflow among physicians was equivalent in magnitude to about one-quarter of the supply of new graduates, with about 450 leaving, compared with a 1995 graduating class of just over 1,700. Among nurses, the outflow was also equivalent to about a quarter of the new graduates, with losses of 800, compared with 3,000 graduates. The annual loss of engineers, computer scientists and natural scientists has been smaller relative to the new supply of university graduates in these fields. The annual average loss of engineers in 1996 and 1997 was equivalent to 4% of 1995 university graduates in this field (12,300). The annual average loss of natural scientists in 1996 and 1997 was equivalent to 1% of 1995 university graduates in these disciplines (18,900).

The bilateral exchange of postsecondary faculty has been more balanced, although during the

Chart H: Emigration to the United States is small relative to the stock of workers in the Canadian labour force.

Sources: Census of Canada; U.S. Immigration and Naturalization Service

1990s faculty emigrating to the United States outnumbered those moving to Canada by a 2-to-1 ratio. Additionally, among faculty who left their positions (other than

for retirement) in 1996 and 1997, senior professors were more likely to leave Canada than to move within Canada (AUCC, 1997). Among faculty leaving their

Data limitations

Both the CPS and RRC estimates are subject to relatively high levels of sampling error. The tax data are based on all filers, but without identification of the destination of movers, whether to the United States or elsewhere. However, it is possible to derive upper and lower bounds for taxfilers who moved to the United States.

To reduce the sampling error of the CPS estimates, an estimate of the average number of Canadian-born people entering the United States each year during the 1990s has been created from CPS results from 1994 to 1999. According to the survey, in March 1994 some 104,000 native-born Canadians had been living in the United States since January 1990—an implied annual outflow of 24,000. Similarly, the implied annual outflows from the 1995-to-1999 surveys are 24,000, 17,000, 16,000, 18,000 and 20,000, respectively. On average then, the number of the Canadian-born who moved to the United States each year during the 1990s (and who continue to live there) was 20,000.

This estimate does not include non Canadian-born people moving from Canada to the United States. Since the 1950s, the U.S. INS data on permanent migration from Canada as the country of last permanent residence have consistently been 40% higher than figures on native-born migrants. In other words, an estimated 28,000 people (both Canadian- and foreign-born) moved from Canada to the United States and continued to reside there during the 1990s.

The CPS data indicate a significant increase in the number of Canadian-born who were living in the United States in 1998 and 1999 and who entered during the 1990s,

but these estimates are based on very small samples and are subject to a high degree of sampling error. However, the implied annual flow based on these two years of CPS data is virtually the same as that based on CPS data for the entire 1994-to-1999 period.

The INS data on temporary visas do not provide reliable statistics. As opposed to counting people, they count visas issued. General I-94 forms, used for all categories of temporary visas, are completed on initial entry to the United States and on visa renewal at border points. However, the data make no distinction between initial entries and renewals.

For example, NAFTA temporary worker visas (TN visas) are valid for a maximum of 12 months and can be renewed within this period: one can either make a request to an INS service centre, or exit and re-enter the United States and renew at the border. The former method may take up to three months, while border renewals can generally be done quickly.

Renewals done at the central sites generate no I-94 forms and produce no counts. Border renewals generate a new I-94 and are included in the INS count of temporary visas.

Temporary visas also include those issued for temporary workers re-entering the United States after an absence of 30 or more consecutive days. Increasingly, Canadians receiving income from U.S. sources obtain a NAFTA visa. For example, a professor making three visits to the United States to give one-hour lectures for fees might generate three INS entries, but not a single stay of significant duration.

positions 58% of senior professors left Canada, compared with 40% of mid-career and 47% of entry-level faculty.

Recent graduates who move are high achievers

Statistics Canada, in collaboration with Human Resources Development Canada, recently carried out a survey of 1995 graduates who had moved to the United States (Frank and Bélair, 1999).⁴ The survey found that the overall percentage of 1995 Canadian postsecondary graduates living in

the United States in 1997 remained small (1.5%). Graduates with more advanced degrees, however, were more likely to leave, with 12% of doctoral graduates living in the United States that year. Movers were also somewhat more likely than non-movers to have received scholarships or other academic awards, and they had significantly higher salaries.⁵

About 18% of movers to the United States had moved back to Canada by 1999. The salaries of this group were similar to those of people remaining in the United States,

evidence that those returning may be bringing valuable work experience back to Canada.

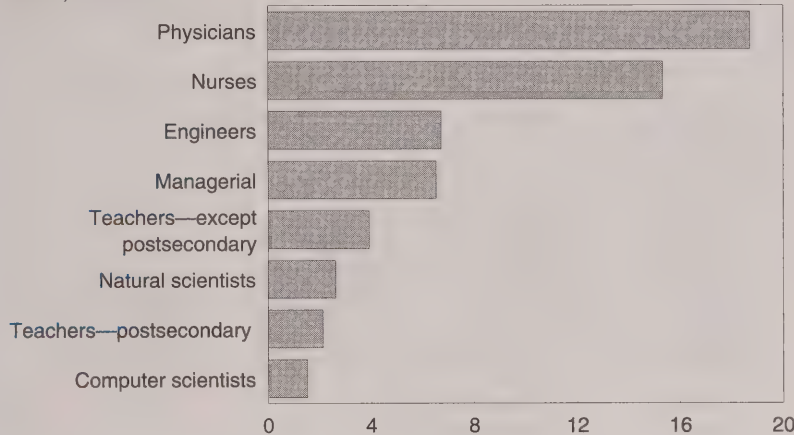
Among those who moved to the United States for work-related reasons, most cited greater availability of jobs and higher pay. A very small percentage of graduates explicitly mentioned lower taxes as one of the reasons for their move.

Immigration to Canada

While Canada does suffer a brain drain to the United States, this is offset by a gain of skilled workers from the rest of the world.

Chart I: Canada has experienced a net loss to the United States in a number of knowledge-based occupations.

Ratio of outflow to inflow from permanent migration between Canada and the United States, 1990-1997



Sources: Citizenship and Immigration Canada; U.S. Immigration and Naturalization Service

Some knowledge-based occupations experienced large increases in permanent immigration from the mid-1980s until 1997, the latest year for which data are available. Over this period, permanent immigration increased fifteen-fold among computer scientists, ten-fold among engineers, eight-fold among natural scientists, and four-fold among managerial workers (Chart J). In 1997, the combined immigration of computer scientists, engineers and natural scientists surpassed 20,000.

On the other hand, permanent immigration has decreased in knowledge-based occupations for which the labour market demand was not as strong during the 1990s—namely physicians, nurses and teachers. Between 1990 and 1997, annual immigration fell 30% among postsecondary teachers, 50% among elementary and secondary teachers, 40% among physicians and 70% among nurses.

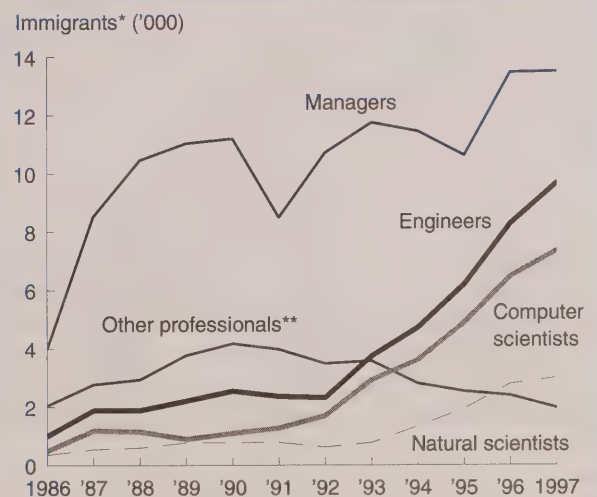
The “points system” used in the selection of independent immigrants has been contributing to the recent increase in Canada’s gain of persons in high-demand occupations. High points are awarded to such people. Points are also awarded for factors such as level of education and ability in an official language.

The Canadian Occupational Projections System forecasts that demand for workers in high-technology will remain high, above the level of current domestic supply (Roth, 1998). Canada produces proportionately fewer graduates in mathematics, sciences and engineering than other G-7 countries, with the exception of Italy. In 1995, Canada produced 741 university graduates in science-related fields per 100,000 people aged 25 to 34 in the labour market, compared with 938 in the United States and an average of 831 across OECD countries (OECD, 1997).

What do recent immigrants do?

Among people aged 15 and over at the time of the 1996 Census, 57% of recent immigrants (those who had arrived between 1990 and

Chart J: Canada enjoys a large and increasing brain gain from worldwide sources.



Source: Citizenship and Immigration Canada

* Permanent migration into Canada from all countries.

** Teachers (all levels), nurses and physicians.

1994) were in the labour force, compared with 65% of the Canadian-born and 59% of immigrants who had come to Canada before 1990. The lower rate of labour force participation among recent immigrants may reflect initial difficulties faced by newcomers in adapting to the Canadian labour market (see *Intended and actual occupations of immigrants*). The lower rate among earlier immigrants can be attributed mainly to their older age relative to that of the Canadian-born population. When viewed by age group, labour force participation rates of pre-1990 immigrants were comparable to or higher than rates of the Canadian-born. Rates were identical for people aged 25 to 54; at ages 55 to 64, this group of immigrants had a higher labour force participation rate than did the Canadian-born.

If the experience of previous immigrants is any indication, the labour force participation of newcomers can be expected to move toward that of people born in Canada. Recent immigrants were twice as likely as the native-born to be working in computer sciences and engineering and in natural sciences (Table). These are precisely the occupations that have been expanding and experiencing worker shortages.

On the other hand, recent immigrants were under-represented in managerial occupations, nursing, teaching at below-postsecondary levels, and social sciences and related occupations. However, immigrants who came to Canada prior to 1990 were equally represented or over-represented in the same occupations, with the exception of elementary and secondary teachers. The experience of recent immigrants may be a reflection of adjustment issues and/or lower labour market demand in these occupations.

Recent immigrants are young and well-educated

In general, international migrants tend to be younger and more highly educated than non-migrant populations. Why? Because immigration laws tend to favour those who are highly educated—this is true in both Canada and the United States. At the same time, the accompanying knowledge and skill levels of highly educated people will probably be in general demand, reducing much of the uncertainty surrounding a life-altering move. More highly educated people are also more likely to have the contacts and information needed to move to another country. Age is a factor inasmuch as younger people may, on balance, be less likely to have personal and financial commitments.

Table: Employment in knowledge-based occupations as a percentage of the workforce, by immigration status

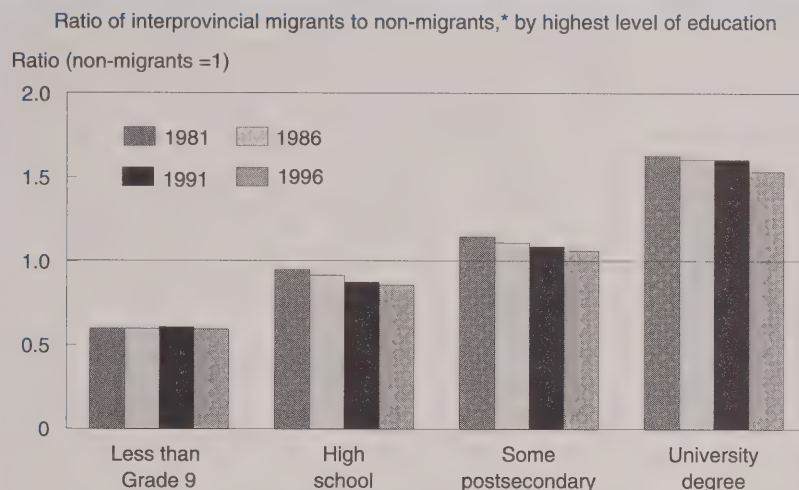
	Canadian-born	Immigrants 1990-1994	Immigrants before 1990
	%		
Entrepreneurs, investors, executives, managers and administrators	13.21	10.13	15.69
Technologists and technicians	3.80	3.00	3.93
Social sciences and related	3.32	1.69	2.63
Teachers—except postsecondary	2.89	0.96	2.23
Nurses	1.78	0.92	1.70
Writers, artists, entertainers and athletes	1.71	1.62	1.88
Computer scientists	1.01	2.06	1.53
Engineers, surveyors, architects and mapping scientists	0.96	1.89	1.93
Teachers—postsecondary	0.92	1.02	1.48
Other health assessment/treating	0.37	0.35	0.48
Physicians	0.33	0.42	0.82
Natural scientists	0.28	0.48	0.40
Other health diagnosing	0.20	0.15	0.26
Mathematicians	0.04	0.04	0.05

Source: Census of Canada, 1996

The propensity to be younger and better educated is also evident among interprovincial migrants, suggesting a common economic incentive in both international and interprovincial migration.

Interprovincial migrants are about one-and-a-half times as likely as the non-migrant population to be aged 15 to 44, and about one-and-a-half times as likely to have a university education (Chart K). In comparison, recent immigrants were about one-and-a-quarter times as likely as the Canadian-born to be 25 to 44. If data are adjusted for age, recent immigrants were close to twice as likely as native-born Canadians to have a university education. Recent immigrants were even more likely to hold advanced university degrees: between two and three times as likely to have a master's degree, and about four times as likely to have a doctorate (Chart L).

Chart K: Interprovincial migrants are over-represented among the well-educated.



Source: Census of Canada

* The comparison is age-adjusted, using the entire Canadian population aged 15 and over as the standard population. To illustrate: the ratio of 1.5 for the category of "university degree" means that interprovincial migrants were one-and-a-half times as likely as non-migrants to be university degree holders, adjusting for age differences in the two populations.

Canadians who move to the United States are even more highly educated than recent Canadian immigrants. However, university graduates migrating to Canada from elsewhere outnumber graduates leaving for the United States (permanent and temporary) by a ratio of approximately 4 to 1 (Chart M). As many immigrants enter Canada with a master's or doctorate as university graduates at all levels leave for the United States.

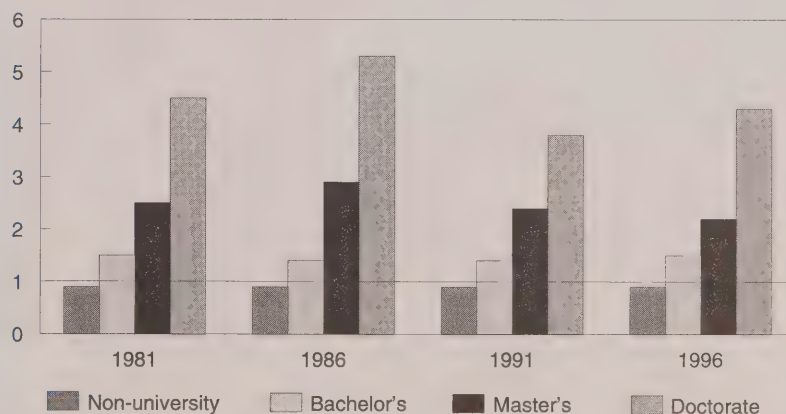
Based on the 1996 Census, about 39,000 degree holders entered Canada each year (both permanently and temporarily) from 1990 to 1996, including 11,000 master's and doctoral degree holders. This compares with an estimated 10,000 per year leaving Canada for the United States in the 1990s, based on the 1994-to-1999 U.S. Current Popu-

lation Surveys. The latter estimate includes both permanent and temporary migrants, and both the Canadian- and foreign-born.⁶

Undoubtedly, a factor influencing the high education of recent immigrants is the "points system" noted earlier. Canada's immigration laws, however, are multi-faceted. The goal is not only to promote Canada's economic interest, but also to reunite families and to assist refugees. The two latter objectives are reflected in the other main classes of immigrants: family class and refugees. Immigrants in these two classes are not subject to the same screening as independent immigrants. Yet even when all immigrants are grouped together, they still have significantly higher qualifications than the native-born population, especially at the post-graduate level.

Chart L: Recent immigrants are much more likely to hold university degrees.

Ratio of distribution of recent immigrants* to the Canadian-born, by highest level of education** (Canadian-born = 1)

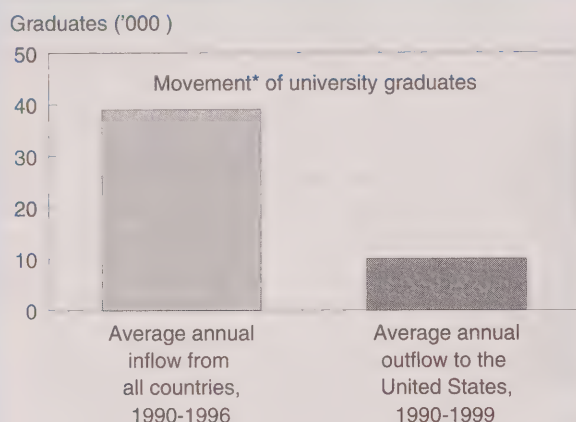


Source: Census of Canada

* Recent immigrants are those arriving in the five-year period prior to each census.

** The comparison is age-adjusted, using the Canadian-born as the standard population. To illustrate: the 1996 ratio of 4 for "doctorate" means that recent immigrants were four times as likely as the Canadian-born to hold a doctorate degree, after adjusting for age differences in the two populations.

Chart M: Canada gains four times as many university graduates from the rest of the world as it loses to the United States.



Sources: *Census of Canada, 1996; U.S. Current Population Survey, 1994-1999*

* This includes both temporary and permanent migration.

Earnings of immigrant computer scientists compare favourably

Much of the debate on brain drain and brain gain has focused on the shortage of skilled workers in the information technology sector. Because of the high demand for these workers, this sector is keenly aware of losses from migration to the United States. It is equally important, however, to consider the contribution of recent immigrants in this sector.

With the expansion of high-technology in recent years, employment of professionals in this sector has grown rapidly, not only among immigrants, but also among the native-born. Between 1991 and 1996, employment of computer engineers, systems analysts and computer programmers grew by 39,000, from 124,000 to 163,000. Recent immigrants (since 1990) accounted for almost a third of this increase (Chart N). It is clear that recent immigrants have become an important component of high-technology employment expansion and that they are helping to meet the high demand for workers in this sector.

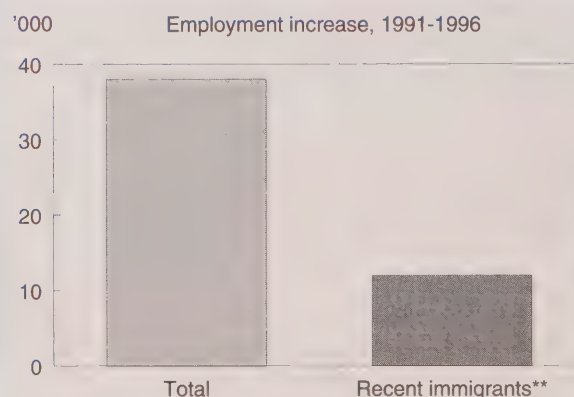
According to the 1996 Census, among those aged 15 to 49 the annual income of immigrant computer scientists who had been in Canada for less than 10 years was slightly lower than that of their

Canadian-born counterparts, and among those aged 50 and over, significantly lower. Immigrants for more than 10 years had similar incomes up to the age of 44, and higher incomes from age 45 on. Hence, it appears that those immigrating at relatively young ages integrate well—and actually earn more—than the Canadian-born computer scientists aged 45 or older. On the other hand, those immigrating at older ages seem to experience more difficulties. For the most part, immigrant computer scientists tend to be young (average age in the early thirties) when they immigrate. In 1995, young immigrant computer scientists earned only 1% less than their Canadian-born counterparts (Chart O).

Summary

Is there a “brain drain” to the United States? Yes—Canada suffers a net loss of workers in a variety of key knowledge-based occupations. The magnitude of these losses is relatively small, however: about 0.1% of people with employment income, and less than 1% of the stock of workers in any specific knowledge-based occupation. Emigrants, though, tend to be well-educated, high income earners and people of prime working age. Furthermore, they are drawn from sectors thought to be important to Canada’s economy

Chart N: Recent immigrants account for one-third of the growth in high technology.*



Source: *Census of Canada, 1996*

* Comprises computer engineers, systems analysts and computer programmers.

** Recent immigrants are those arriving in the five-year period prior to each census.

Intended and actual occupations of immigrants

Between 1990 and 1994, some 1.2 million people became landed immigrants in Canada. According to the 1996 Census, close to one million people reported immigrating to Canada over the same period—83% of the Citizenship and Immigration Canada figure. Several factors explain this difference, including deaths, return of immigrants to their country of origin, or emigration to another country. Additional reasons include undercounting of immigrants in the census, and possible reporting errors by immigrant respondents—for example, in reporting the year of landing in Canada.

The intended and actual percentage of recent immigrants (between 1990 and 1994) working in knowledge-based occupations was equal, at 11.6%. Among recent immigrants intending to work in other occupations, the aggregate match between intended and realized occupations was not as close. On becoming landed immigrants, 42% of recent immigrants planned to work in these other occupations, but in 1996 only 36% were doing so. The closer aggregate fit in knowledge-based occupations is not surprising, given the demand. Between 1990 and 1998, full-time employment of professional and managerial workers grew by 780,000, compared with 55,000 for all other workers.

Knowledge workers who arrived between 1990 and 1994, by intended occupation at entry and realized occupation in 1996

	Intended	Realized
	%	
Total knowledge workers	100.0	100.0
Entrepreneurs, investors, executives, managers and administrators	39.1	41.0
Technologists and technicians	11.0	12.1
Computer scientists	7.7	8.3
Engineers, surveyors, architects and mapping scientists	11.4	7.7
Social sciences and related	5.8	6.8
Writers, artists, entertainers and athletes	5.6	6.6
Teachers—postsecondary	2.7	4.1
Teachers—except postsecondary	5.1	3.9
Nurses	3.8	3.7
Natural scientists	3.1	1.9
Physicians	1.7	1.7
Other health assessment/treating	1.9	1.4
Other health diagnosing	0.7	0.6
Mathematicians	0.4	0.1

Sources: Citizenship and Immigration Canada; Census of Canada, 1996

The fit between intended and realized occupations varied for individual knowledge-based occupations (Table). A higher percentage of recent immigrants were working as computer scientists in 1996 (8.3% of those in knowledge-based occupations) than had intended to do so (7.7%). On the other hand, fewer newcomers were working in engineering and natural sciences than had intended. Between the 1991 and 1996 Censuses, employment of computer scientists grew by 30%, while employment of engineers and natural scientists grew more slowly, by 5% and 11%. The high demand for computer scientists may have drawn some of the immigrants with training in engineering, mathematics and natural sciences into computer sciences.

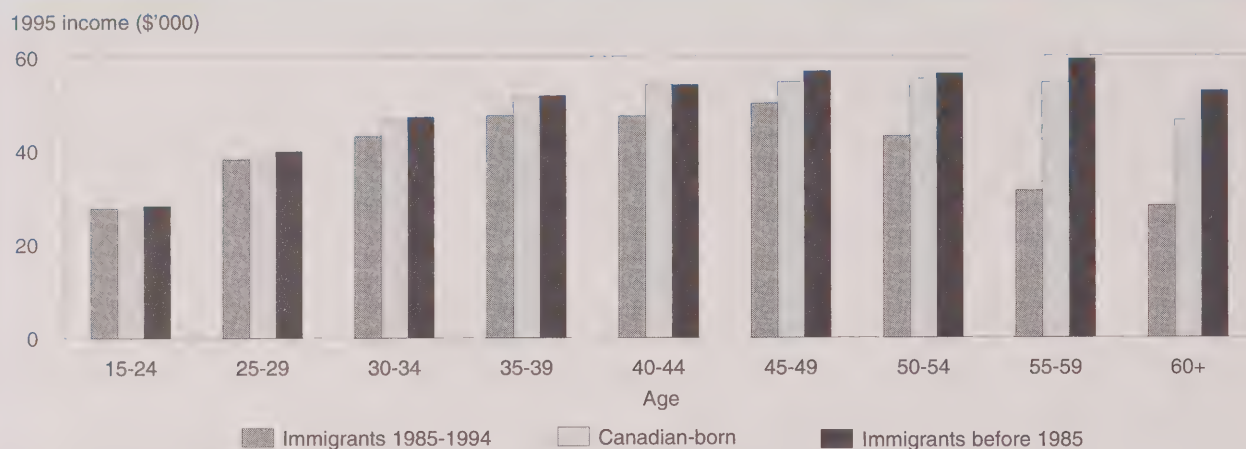
The actual percentage of recent immigrants working in natural and applied science occupations combined (including computer sciences) was lower (18.1% of those in knowledge-based occupations) than the intended percentage at the time of landing (22.7%). One possible factor may be “flow-through” immigration in these high-demand occupations; that is, a proportion of the new immigrants may have emigrated to other countries, particularly the United States. Additionally, among the great number of immigrants Canada admitted each year in the 1990s in these high-technology fields, some may not have successfully integrated into the Canadian labour market in their field of training.

The intended and actual percentages of immigrants working as physicians and nurses matched quite closely. It seems, therefore, that despite licensing requirements for health professionals, immigrant health professionals had successfully integrated and were practising in their field of training in Canada. The health sector may have been better able to absorb immigrant physicians and nurses, perhaps because of the relatively small number admitted each year.

The situation for educators at postsecondary levels was different from that of educators at the elementary and secondary levels. The actual percentage of immigrants working as postsecondary teachers (4.1%) exceeded the intended percentage (2.7%). It may be that some of the recent immigrants were graduate students at the time of landing, but by 1996 were teaching at universities or colleges. The actual percentage of immigrants working as elementary and secondary teachers (3.9%) was below the intended percentage (5.1%). This may reflect more limited opportunities for new hiring of teachers because of declining school-age populations in some jurisdictions, for example, or reductions in public spending on education as governments try to reduce or eliminate deficits.

The realized percentages in managerial, administrative and technical occupations were all close to or slightly higher than the intended percentages in these occupations.

Chart O: In 1995, earnings of immigrant computer scientists were nearly identical to those of their Canadian-born counterparts.*



Source: Census of Canada, 1996

* Employed full year full time.

and society. Of the 1995 graduates who moved to the United States, a disproportionately high percentage (12%) were doctoral graduates. Likewise, 0.9% of taxfilers with annual incomes of \$150,000 or more left Canada in 1996, a migration rate nine times higher than that of all taxfilers. Taxfiler data also indicate an upward trend in the number of people leaving Canada in the 1990s.

On the other hand, Canada receives more university graduates from elsewhere than it loses to the United States. For every university graduate migrating from Canada to the United States, whether on a temporary or permanent basis, four university degree holders migrate from the rest of the world to Canada. Compared with the Canadian-born population (age difference adjusted), recent immigrants are over-represented among university graduates, especially those with advanced degrees.

Recent immigrant high-technology workers are making an important contribution to growth in this sector. Immigrants in the 1990s accounted for about one-third of the increase in employment among computer engineers, systems analysts and computer programmers.

Clearly, this topic is far more complex than first appears. Questions remain about the size of the flow of emigrants and the permanency of their moves, and

the degree to which the best and the brightest may be over-represented. Questions also remain about the extent to which Canadian immigrants compensate for the loss. The situation may also have evolved since these data were compiled and may still be evolving. Statistics Canada will continue to monitor and update existing sources of data, and will work with Human Resources and Development Canada, Industry Canada, and Citizenship and Immigration Canada, as well as with its counterparts in the United States, to extend and improve what is known about the nature, extent and economic effect of the brain drain to the United States and the brain gain from the rest of the world (see *Further initiatives*).

Perspectives

Notes

- 1 As these data are based on all taxfilers and are therefore not subject to sampling errors, they provide a reliable trend of emigration of taxfilers from Canada to all countries. Taxfilers need to identify themselves as movers, however, and some may be prompted not to make this declaration for financial or other reasons.
- 2 Earlier data can be found in Boothby (1993).
- 3 Occupational data are not available for either temporary emigrants to the United States or emigrants to countries other than the United States.

Further initiatives

Taxfiler data

The use of taxfiler data for industrial sector analysis of movers is in its initial stages (see *Industrial sector of movers*). Together with Industry Canada, Statistics Canada will be examining the number and income profiles of movers by industrial sector, in comparison with all taxfilers, as well as trends over time.

National Graduates Surveys (NGS)

The National Graduates Survey (NGS), developed by Human Resources Development Canada and Statistics Canada, is being enhanced to provide estimates of the number of graduates of postsecondary institutions leaving Canada for the United States, by level and field of study, both two and five years after graduation. Previously, it included only those remaining in Canada. The next survey will be conducted later in 2000, a five-year follow-up of the graduating class of 1995. A survey of the class of 1999 is planned for 2001.

Survey of Air and Land Travelers to Canada

The feasibility of conducting surveys on air and land travelers to profile Canadians returning from the United States, and U.S. citizens coming to Canada, is currently being explored. Such surveys have potential to generate information on the intent, experience and duration of

Canadians working in the United States and on the bilateral exchange of high-skilled workers between Canada and the United States.

U.S. 2000 Census

The 2000 Census of the United States will provide in-depth information on the number and characteristics of Canadians who are living in the United States.

Longitudinal Survey of Immigrants

The Longitudinal Survey of Immigrants is being developed by Statistics Canada in collaboration with Citizenship and Immigration Canada to provide information on the early experiences of recent immigrants to Canada. Immigrants will be interviewed six months, two years and four years after arrival.

Longitudinal Immigrants Database (IMDB)

The IMDB links immigration and taxation administrative records to allow analysis of the economic performance of the immigrant population in Canada. The data are updated annually and are currently available for 1980 to 1995. Citizenship and Immigration Canada has performed preliminary analyses, and Statistics Canada has been involved in the development of the database.

4 *Perspectives* published a series of charts from that study in its "Key labour and income facts" department (Winter 1999).

5 A possible contributing factor may be the high proportion (44%) of movers who rated themselves near the top of the class.

6 University graduates emigrating to countries other than the United States are not included because of lack of data.

■ References

Association of Universities and Colleges of Canada (AUCC). "Faculty surveys." (unpublished data) Ottawa: AUCC, 1997.

Boothby, D. *Migratory flows by occupation between Canada, the United States, Australia and the United Kingdom*. Ottawa: Human Resources Development Canada, 1993.

Citizenship and Immigration Canada. *Citizenship and Immigration Statistics*. Ottawa: Citizenship and Immigration Canada, various years.

Frank, J. and E. Bélair. *South of the Border: Graduates from the Class of '95 who Moved to the United States*. Catalogue no. 81-587-XPB. Ottawa: Human Resources Development Canada and Statistics Canada, 1999.

Gingras, Y. and R. Roy. *Is There a Skill Shortage in Canada?* Ottawa: Human Resources Development Canada, 1998.

Lee, F. and H. Has. "A quantitative assessment of high-knowledge vs. low-knowledge industries." In *The Implications of Knowledge-Based Growth For Micro-Economic Policies*, edited by P. Howitt. Ottawa: Industry Canada, 1996.

Miller, H.N. "The information technology worker shortage and vocational education." Testimony of Harris N. Miller, President of Information Technology Association of America, before the U.S. Senate Committee on Labor and Human Resources, April 24, 1997.

Organisation for Economic Co-operation and Development. *Education at a Glance: OECD Indicators*. Paris: OECD, 1998.

Industrial sector of movers

Most of the analysis presented in this study examines migration from the perspective of individuals. However, the issue can also be viewed from a business or industrial sector perspective. Such analysis is in its initial stages, using taxfiler data. Industries with the greatest number of movers in 1996 have been identified. Further analysis is planned to compare the industrial distribution of movers with that of all taxfilers, in order to identify industries in which movers are over-represented, and to examine trends over time.

The data are based on Canada Customs and Revenue Agency (CCRA) T1 and T4 tax files and Statistics Canada's Longitudinal Employment Analysis Program (LEAP) file, constructed by the Business and Labour Market Analysis Division. The T1 file is built from individual tax returns, while the T4 file is created from the T4 forms issued by employers. The LEAP file analyzes employment and income dynamics of employees in Canada; the database includes a classification of employers by industry using the 1980 Standard Industrial Classification (SIC). Linkage of these files has identified the SIC code of each person's primary employer in 1996. Two groups of taxfilers were excluded in this linkage: persons with no earned income, and the self-employed.

The industries with the most movers were hospitals; university education; and elementary and secondary education. Also in the top 10 were a cluster of high-technology industries, including architectural, engineering and other scientific and technical services; computer and related services; and communication and other electronic equipment. The other industries in the top 10 were banks, trust companies and credit unions; other business services; federal government services; and food services.

The sources also provide indirect information on the workers who are leaving. However, the data need to be viewed with caution. For example, not all movers employed by a university were necessarily full-time university professors; some may have been master's or doctoral students whose primary earnings were from teaching and/or research duties. Likewise, it would be wrong to assume that all movers from high-technology industries were high-technology workers.

With these caveats in mind, this early work suggests that movers seem to be concentrated in knowledge-intensive industrial sectors. Most of the top 10 industries fall into high-knowledge industries as classified by Industry Canada (Lee and Has, 1996).

Taxfilers leaving* Canada for all destinations, by industry of employer, 1996

Industry (1980 SIC code)	Number of movers
Hospitals	1,060
University education	910
Elementary and secondary education	690
Architectural, engineering and other scientific and technical services	660
Computer and related services	580
Banks, trust companies and credit unions	520
Food services	440
Federal government service**	420
Communication and other electronic equipment	360
Other business services	290
All remaining industries	10,640

Source: Small Area and Administrative Data Division

* These data exclude movers without earned income, as well as the self-employed. The industry is that of movers' principal employer (in terms of 1996 earnings).

** Except defence services.

---. *Science, Technology and Industry: Scoreboard of Indicators*. Paris: OECD, 1997.

Organisation for Economic Co-operation and Development (OECD), Human Resources Development Canada (HRDC) and Statistics Canada. *Literacy Skills for the Knowledge Society: Further Results of the International Adult Literacy Survey*. Catalogue no. 89-556-XPE. Paris and Ottawa: OECD, HRDC and Statistics Canada, 1998.

Parsons, N. "Shortage of Canadian software workers disturbing." Canadian Press Newswire. February 19, 1996.

Roth, W. *Canadian Occupational Projection System: A Presentation of Results Using a Revised Framework*. Ottawa: Human Resources Development Canada, 1998.

What's new?

Recent reports and studies

■ JUST RELEASED

■ *Longitudinal Administrative Databank*

Data for 1997 have been added to the Longitudinal Administrative Databank (LAD). This databank now spans 16 years, from 1982 to 1997, and contains information about individuals and census families.

The LAD consists of a 10% longitudinal sample of Canadian taxfilers. It is designed to help researchers and analysts study the income changes of Canadians and their families. The LAD includes a wide variety of income and demographic variables, such as employment income, self-employment income, Registered Retirement Savings Plan contributions, alimony, age, sex and census family composition. The large sample (2.2 million persons in 1997) ensures reliable estimates for Canada, the provinces, census metropolitan areas, and some subprovincial regions, based on aggregations of postal codes.

Custom tabulations including 1997 data are now available. For more information, contact Client Services, Small Area and Administrative Data Division, at (613) 951-9720; fax: (613) 951-4745; saadinfo@statcan.ca.

■ *Overview of labour force statistics*

Historical Labour Force Statistics is an annual compilation of the seasonally adjusted employment and unemployment statistics presented each month in the media. It provides data on general labour market characteristics for Canada, the provinces and metropolitan areas going back 10 to 20 years. Each year, the series are updated and revised according to the latest seasonal models and factors.

Historical Labour Force Statistics, 1999 (Catalogue no. 71-201-XPB, \$114) is now available. For more information, contact Jeannine Usalcas, Labour Statistics Division, at (613) 951-4720; fax: (613) 951-2869; usaljea@statcan.ca.

■ *Education indicators*

Education levels in Canada, already high by international standards, improved substantially during the 1990s, according to a new report on the status of education in Canada. More young people graduated from high school, and more high school graduates went on to higher education.

Education Indicators in Canada is a new report of the Pan-Canadian Education Indicators Program, a joint initiative of Statistics Canada and the Council of Ministers of Education Canada, in collaboration with the provincial and territorial ministries responsible for education and training. Its goal is to develop and disseminate a comprehensive set of statistical indicators describing students, teachers and the education systems in Canada. Data were chosen on the basis of two criteria: information needed for policy development and practical availability.

Internationally, among member nations of the Organisation for Economic Co-operation and Development (OECD), Canada had the highest percentage of its population (48%) with postsecondary education in 1995, compared with the OECD average of 23%.

Canada's investment in education is one of the highest in the world, as measured by OECD indicators of education expenditure. Per student spending in Canada, from both public and private sources, amounted to US\$6,400 in 1995, the most recent year for which internationally comparable data are available. This was second only to the

United States at US\$7,900. The OECD average was US\$4,700.

When it comes to labour market success, it pays to stay in school. With each increment in education, employment rates rise and unemployment rates fall. Earnings of recent post-secondary graduates increase progressively with more advanced qualifications.

Education Indicators in Canada (Catalogue no. 81-582-XIE, free) is now available on Statistics Canada's website (www.statcan.ca). It is also available on the Council of Ministers of Education website (www.cmec.ca). A paper copy (Catalogue no. 81-582-XPE, \$20) is also available. For more information, contact Client Services, Centre for Education Statistics, at (613) 951-1503; educationstats@statcan.ca.

■ *Article from Canadian Economic Observer*

The labour market in the 1990s, Part II: Distributional outcomes—Who is winning and losing?

Labour market outcomes improved in the 1990s for women, while outcomes for men generally deteriorated. The feature article in the February 2000 issue of *Canadian Economic Observer* also observes other major trends: declining real wages for young men, rising rates of low income, especially in the mid-1990s, and little or no change in earnings inequality.

The earnings gap between older and younger men, which emerged in the early 1980s, continued to widen in the 1990s. Real annual earnings of men under 35 fell following the recession of the early 1990s and displayed little recovery until 1997.

Earnings also fell for recent immigrants (those who immigrated within five years of the census), particularly among men. In 1995, recent male immigrants who were university graduates aged 35 to 54 earned 55% as much as their Canadian-born counterparts, down from 72% in 1985. For recent immigrant women, declines in relative earnings were recorded between 1990 and 1995.

While women continued to earn less than men, real weekly earnings among women rose 12% between 1989 and 1996. At the same time, they

fell marginally for men. Growth in earnings for women has outstripped that for men in both low and high earnings deciles.

Despite a weak economic recovery, low income rates rose in the mid-1990s, particularly for families with children. While earnings rose for these families between 1993 and 1996, this did not fully offset declines in income received from transfers.

Canadian Economic Observer (Catalogue no. 11-010-XPB, \$23/\$227) is a monthly publication. For more information about this article, or to enquire about concepts, methods or data quality, contact Garnett Picot or Andrew Heisz, Business and Labour Market Analysis Division, at (613) 951-8214 or (613) 951-3748, respectively.

■ *Geography working paper series*

A working paper series from the Geography Division is designed to stimulate discussion on conceptual, methodological or technical issues involved in developing and disseminating geographic data, products and services. Readers of the series are encouraged to contact Statistics Canada with comments, criticisms and suggestions.

Introducing the Dissemination Area for the 2001 Census (Catalogue no. 92F0138MIE, free) is now available on Statistics Canada's website (www.statcan.ca). A paper copy (Catalogue no. 92F0138MPE, \$10) is also available. To order this paper, or for more information about the series, contact GEO-Help, Geography Division, at (613) 951-3889; fax: (613) 951-0569; geohelp@statcan.ca.

■ *Demographic statistics*

The 1999 edition of *Annual Demographic Statistics* provides an updated statistical snapshot of the population of Canada, the provinces and territories and census metropolitan areas as of July 1, 1999.

This publication provides the most recent population estimates and projections up to 2004 by age group and sex, plus data on births, deaths and migrations, and other demographic components. The information is grouped by province

and territory, census metropolitan area and census division. Data on census families and vital statistics are also provided.

The CD-ROM, included with the publication, contains even more data than for 1998. The historical time series includes population data back to 1971 for provinces and territories, and to 1986 for census divisions and census metropolitan areas. The CD-ROM also includes population projections, as well as animated age pyramids illustrating the aging of the population.

Annual Demographic Statistics, 1999 (Catalogue no. 91-213-XPB, \$125 including CD-ROM; Catalogue no. 91-213-XIB, \$56 CD-ROM not included) is now available. For more information, or to enquire about concepts, methods or data quality, contact François Nault, Demography Division, at (613) 951-9582; fax: (613) 951-2307.

■ *Analytical Studies Branch research papers series*

Determinants of Innovative Activity in Canadian Manufacturing Firms: The Role of Intellectual Property Rights

J. Baldwin and D. Sabourin
Research Paper Series no. 122

This study investigates the contribution of various plant and industry characteristics to innovation in Canadian manufacturing. Data come from the 1993 Statistics Canada Survey of Innovation and Advanced Technology. This study investigates the dual probability that a firm will innovate if it uses intellectual property rights, and will claim intellectual property rights if it innovates.

Using logistic regression analysis, the study estimates the probability of being innovative, taking into account plant and industry characteristics, including any research and development; any collaborative research with universities; the firm's size; the degree of competition it faces; the nationality of its ownership; and its internal capabilities in marketing, technology, production and human resources.

University research plays a key role in the innovation process in Canadian manufacturing. Firms in industries relying on science-based university research were more likely to be

innovative. Research and development also played a major role in stimulating innovation. Firms that performed research and development were four times as likely to have introduced a major innovation as firms that did not. Although important, research and development was not the only input into the innovation process; marketing and technological competence were close behind.

Large plants (those with 500 or more employees) were significantly more innovative than were small plants (those with fewer than 100 employees) after other firm characteristics, such as intensity of research and development, competitive environment, nationality of ownership and degree of technological competency were controlled for. The probability of innovating was close to 70% for large firms and 30% for smaller firms.

For more information, or to enquire about concepts, methods or data quality, contact John Baldwin or David Sabourin, Micro Economic Analysis Division, at (613) 951-8588 or (613) 951-3735, respectively.

Social Transfers, Earnings and Low-income Intensity among Canadian Children, 1981-96: Highlighting Recent Developments in Low-income Measurement

G. Picot
Research Paper Series no. 144

Analysts have long used the low income rate—the proportion of people below a given low income cutoff—as the principal means of tracking low income trends and assessing the direct effects of changes in employment earnings and transfer payments on these trends. This research paper analyzes low income trends among Canadian children between 1981 and 1996. It concludes that the low income rate provides valuable information, but when used alone, it can miss some important trends. This is because the low income rate measures only the number (or proportion) of people with low income; it says nothing about changes in their income levels.

Recently, economists have developed a measure called “low income intensity.” This paper suggests that this measure be considered since it makes use of both the low income rate and information on the low income gap, which measures how

far below the low income cutoff a family's income is. Information on the gap is published, but is often less prominently featured than the rate. The new measure can detect changes in income levels of low income families. This paper shows that the intensity measure and the commonly used rate may lead to quite different conclusions about low income trends among children and about the direct role of changes in earnings and transfers in determining those trends.

For more information, or to enquire about concepts, methods or data quality, contact Garnett Picot, Business and Labour Market Analysis Division, at (613) 951-8214.

The Maturation of Canada's Retirement Income System: Income Levels, Income Inequality and Low Income among the Elderly

J. Myles

Research Paper Series no. 147

As real incomes of the elderly have advanced, inequality within this group has declined. During the 1980s, average real incomes among the population aged 65 and over increased 10%, a gain that went largely to lower income seniors.

This study categorized seniors into five groups based on their income levels, each representing 20% of the total. Among the one-fifth of seniors with the lowest incomes, disposable income rose 31% between 1980 and 1990, compared with only 1% among the one-fifth of seniors with the highest incomes.

For seniors in the lowest income levels, the changes were a direct result of higher benefits from three sources: Old Age Security, the Guaranteed Income Supplement and the Canada and Quebec Pension Plans (C/QPP). For the majority, the fastest growing sources of income in the 1980s were C/QPP benefits, followed by private pension income.

In 1980, 40% of seniors were in the lowest income group, compared with 20% of all Canadians. By 1995, their proportion in the lowest income group had fallen to 18%, roughly the same as that for other Canadians.

In an international context, these trends represent a significant improvement in the income position of seniors. In the 1970s, the low income rate among Canadian seniors was among the highest for developed nations where data were available. By the early 1990s, Canada had achieved one of the lowest rates.

For more information, or to enquire about concepts, methods or data quality, contact John Myles, Business and Labour Market Analysis Division, at (613) 951-3547.

To obtain copies of these or other studies in the Research Paper Series, contact H  l  ne Lamadeleine at (613) 951-5231. They are also available free on the Statistics Canada website (www.statcan.ca). The menu path is "Products and services," "Downloadable research papers (free)," then "Analytical studies."

■ Farm statistics

Farm families earned an average \$59,200 in 1997, 4.2% more than in 1996, according to the latest data from 1997 personal income tax returns. Average farm family income advanced at a faster pace than in 1996 (0.3%), largely because of higher off-farm employment income. The overall increase in 1997 resulted from a 5.2% gain in off-farm income and a 2.1% increase in net farm operating income (before depreciation).

Farm families specializing in poultry and egg production, who recorded the highest average total income (\$78,200), posted the largest gain (27.1%), owing to substantial growth in both their average net farm operating income (47.8%) and off-farm income (11.8%). Families operating tobacco farms were a close second at \$76,500, followed by those operating grain and oilseed farms (\$66,300). Families running livestock combination farms had the lowest average total income (\$46,700). Only three of the major farm types recorded a drop in average total family income: potato (-10.6%), tobacco (-8.2%), and greenhouse and nursery (-4.6%).

For 1998, average operating revenues per farm increased 3.0% to \$154,000, according to taxation records. During the same period, average operating expenses rose 3.9% to \$130,400.

Operating margins were 15.3 cents per revenue dollar, down from 16.1 cents in 1997. In current dollars, average operating revenues in 1998 were 13.2% above the five-year average for 1993 to 1997, but operating margins were lower by 1.3 cents per dollar of revenue.

Average operating expenses rose mainly because of higher crop production expenses (7.5%), cattle purchases (7.5%) and interest costs (12.7%).

Among farm types, the average operating revenues of poultry and egg farms ranked first at \$539,600, followed by those of potato farms (\$452,800) and greenhouse and nursery farms (\$426,600).

For more information, or to enquire about concepts, methods or data quality, contact Lina Di Piédro, Agriculture Division, at (613) 951-3171; lina.dipietro@statcan.ca, or the Client Services Unit, Agriculture Division, at (613) 951-5027; fax: (613) 951-3868; agriculture@statcan.ca.

■ *Small business: A statistical overview*

In 1997, there were about 955,800 active employers of all sizes. About 718,000, or 75%, had fewer than five employees; 213,000, or about 22%, had between 5 and 50. Small businesses continued to account for employment creation well out of proportion to their size in 1997. Businesses with fewer than 50 employees accounted for 57% of the gross increase in employment despite representing only 32% of total paid employment. Businesses with fewer than five employees accounted for 26% of the gross increase, while representing just under 9% of total employment.

On a net basis, small firms created 353,000 more jobs than they lost in 1997. This amounted to more than three-quarters of the net employment increase observed among employers of all sizes.

In 1997, some 71% of small businesses with annual revenue between \$30,000 and \$5 million made a profit. This proportion was unchanged from 1995, and was only slightly higher than the 1993 level, 69%. As well, small businesses' net profit margins were \$18,500, or 5.0% of gross revenue. This was unchanged from 1995 but an improvement on 1993, when profits represented 3.9% of gross revenue.

These data are noted in two new electronic products: *Employment Dynamics* and *Small Business Profiles*. The former is based on the Longitudinal Employment Analysis Program (LEAP), a longitudinal file of all businesses with at least one employee, between 1983 and 1997. It includes the number of employer businesses, as well as their payroll and employment, by province and industry. The employment measure used is the average labour unit, obtained by dividing annual payroll by average annual earnings. The data are tabulated by employment size and life status of business. They are available in tables comparing consecutive years.

The LEAP database includes any business remitting taxes on behalf of employees through the payroll deduction accounts of the Canada Customs and Revenue Agency (formerly Revenue Canada). An undetermined number of persons working on their own account (self-employed) are excluded from *Employment Dynamics*, as they do not always pay themselves as employees.

Small Business Profiles reports financial and employment data for an average small business, defined as having annual gross operating revenue between \$30,000 and \$5 million. The 1997 profiles are available for unincorporated and incorporated businesses in about 680 industries, excluding the financial sector, and for each province and territory.

In 1997, manufacturing and business services led net employment growth among small businesses with fewer than 50 employees. The former recorded a net employment increase of 54,800 over 1996, accounting for 15.5% of all net employment gains among businesses with fewer than 50 employees. The latter, covering firms such as employment agencies and management consultants, grew by 50,500, which represented 14.3% of total net employment growth among businesses of this size. The accommodation, food and beverage industry accounted for 11.9% of net employment gains among businesses with fewer than 50 employees, followed by wholesale trade (9.3%) and construction (8.8%).

Employment Dynamics (Catalogue no. 61F0020XCB, \$500) and *Small Business Profiles* (Catalogue no. 61F0015XCB, \$500) are now available on

CD-ROM. To order, contact your nearest Statistics Canada Regional Reference Centre.

For more information, or to enquire about concepts, methods or data quality, contact Jamie Brunet, Small Business and Special Surveys Division, at (613) 951-6684; brunjam@statcan.ca.

■ ***Income—new data source, new product line***

As mentioned previously in "What's new?" (Spring 2000), the Survey of Labour and Income Dynamics (SLID) will replace the Survey of Consumer Finances (SCF) as the official source of income data, starting with the 1998 reference year.

SLID is a longitudinal survey—the same people are interviewed annually for a period of six years—that began with the 1993 reference year. The income content of the two surveys is similar—with SLID adding a large selection of variables that capture transitions in Canadians' jobs, income and family events. SLID is also being used to produce annual cross-sectional income estimates previously based on the SCF.

Estimates from the two surveys tell essentially the same story. Had the major Statistics Canada income releases over the last five years been based on SLID rather than the SCF, the main messages would have been no different.

For more information, see *A Comparison of the Results of the Survey of Labour and Income Dynamics (SLID) and the Survey of Consumer Finances (SCF), 1993-1997: Update* (Catalogue no. 75F0002MIE99007) and *Bridging Two Surveys: An Integrated Series of Income Data From SCF and SLID, 1989-1997* (Catalogue no. 75F0002MIE00002), which are available free on Statistics Canada's website (www.statcan.ca). The menu path is "Products and services," then Downloadable research papers (free)," followed by "Income, expenditures, pensions, assets and debts," and "Income."

The transition from the SCF to SLID has triggered a revision of the income product line, which will now consist of

- an annual report, *Income in Canada*, available in print (Catalogue no. 75-202-XPE, \$45)

and electronic (Catalogue no. 75-202-XIE, \$45) formats. It will provide results and analysis on all major income concepts, in one single report. This publication will include data on market income, government transfers, total income, income tax, income after tax, and low income, as well as other concepts such as income quintiles. The electronic version contains more detailed geographic coverage;

- an annual CD-ROM, *Income Trends in Canada* (Catalogue no. 13F0022XCB, \$195), which will provide nearly two decades of data, starting in 1980, for Canada, the provinces and 15 metropolitan areas. The CD-ROM will present the data in Beyond 20/20™ format, which allows users to view trends, create tables and chart income. An edition of this CD-ROM, featuring data from 1980 to 1997, has previously been released;
- public use microdata files, modeled on the SCF files;
- and longitudinal data, available through remote access, as well as at Statistics Canada regional reference centres and research data centres soon to be opened on selected university campuses across the country.

For further information, contact Client Services, Income Statistics Division, at (613) 951-7355 or 1 888 297-7355; fax: (613) 951-3012; income@statcan.ca.

■ DID YOU MISS?

■ ***Retirement savings, 1991 to 1997***

A majority of taxfilers in Canada saved for retirement during the 1990s, either by contributing to a registered retirement savings plan (RRSP) or by having an employer-sponsored registered pension plan (RPP). Seven of every ten taxfilers aged 25 to 64 saved through at least one of these programs between 1991 and 1997.

Of the 30% of taxfilers in this age group who did not use these programs, almost all had incomes of less than \$20,000. Over half of the non-savers were women (60%). The continued non-participation of such people may mean that

public pension programs, such as Old-Age Security, the Guaranteed Income Supplement or the Canada and Quebec Pension Plans, will be their major source of income in retirement.

As income rises, so does the likelihood of saving through RRSPs or RPPs. Eight of ten people with incomes between \$30,000 and \$40,000 saved regularly (in four or more years). Virtually all taxfilers with incomes over \$40,000 did as well. People with incomes of \$50,000 or more (about 15% of taxfilers) were the most likely to be consistent savers; three-quarters of the taxfilers in this income group either contributed to an RRSP or belonged to an RPP in all seven years. Only about 10% of those with incomes of less than \$30,000 saved each year.

The data for this analysis come from administrative files provided by the Canada Customs and Revenue Agency. The pension adjustment factor is used to estimate the value of the pension accrued in a registered pension plan or deferred profit sharing plan in a year.

References to the frequency of savings from 1991 to 1997 were based on people who filed a tax return in each of the seven years and were aged 25 to 64 as of December 31, 1997. Income was averaged over the seven-year period. References to the number of savers or amounts saved in any one year are based on the returns of all taxfilers aged 25 to 64 as of December 31 of that year.

Data on retirement savings through RRSPs and RPPs are available free on Statistics Canada's website (www.statcan.ca) under "Canadian statistics," "Labour, employment, and unemployment," followed by "Employment, insurance and pensions." *Retirement Savings through RPPs and RRSPs, 1991 to 1997* (Catalogue no. 74F0002XIB, \$33) is also available.

For more information about these results and related products and services, or to enquire about concepts, methods or data quality, contact Client Services, Income Statistics Division, at (613) 951-7355 or 1 888 297-7355; fax: (613) 951-3012; income@statcan.ca.

Perspectives

New CD-ROM Version Now Available

The Historical Annual Average Publication has just become BETTER, 1983-1999



You can now get the historical labour market information needed to complete your research project; accomplish long-term company planning or successfully resolve contract escalation questions.

This indispensable reference tool will help you... Identify, retrieve and process essential information for over 200 industry groups available at national, provincial and territorial levels. Also included are: total number of employees (including estimates of those paid by the hour); average weekly and hourly earnings; average weekly hours worked and payroll data.

Our new CD-ROM Beyond 20/20 version is an easy, yet powerful, data viewer that empowers users to manipulate, visualize and quickly understand the data and its associated trends. Also, using Adobe Acrobat software, you can print a preformatted publication for the years 1987 to 1999.

Plus, also included in this issue is the **Help-Wanted Index 1981-1999** supplement. This index gives you reliable information on changes in the demand for labour for Canada and provinces, regions and metropolitan areas. In fact, it is the only labour demand compiled by Statistics Canada on a regular basis.

The **Annual Estimates of Employment, Earnings and Hours, 1983-1999** plus the **Help-Wanted Index 1981-1999**; a goldmine of information at your fingertips.

Order Now and you'll receive Statistics Canada's Canada at a Glance 1999 Booklet free of charge. But hurry, quantities of this booklet are limited.

ORDER FORM



MAIL

Statistics Canada
Labour Statistics Division
Ottawa, Ontario
Canada K1A 0T6



PHONE

1 800 263-1136
1 613 951-4090



FAX to

1 613 951-4087



INTERNET:

order@statcan.ca
labour@statcan.ca

METHOD OF PAYMENT (Check only one)

☐ Charge to my: ☐ MasterCard ☐ VISA

Card Number

Authorized Signature

Expiry Date

Cardholder (Please print)

☐ Payment Enclosed \$

☐ Purchase Order Number

Authorized Signature

Name

Company

Department

Address

City

Province

()

()

Postal Code

Phone

Fax

Your personal information is protected by the Privacy Act.*

Catalogue No.

Title

Price (CDN \$)

Quantity

Total CDN \$

72F0002XCB

CD-ROM

150.00

10-3009XKB

CD-ROM and printed copy

185.00



Shipping charges: No shipping charges for delivery in Canada. For shipments to the United States, please add \$6 per issue or item ordered. For shipments to other countries, please add \$10 per issue or item ordered. Annual frequency = 1. Quarterly frequency = 4. Monthly frequency = 12.



Clients outside Canada pay in Canadian dollars drawn on a Canadian bank or pay in equivalent US dollars, converted at the prevailing daily exchange rate, drawn on a US bank.



Statistics Canada is FIS-ready. Federal government departments and agencies must include with all orders their IS Organization Code _____ and IS Reference Code _____.



* Statistics Canada will only use your information to complete this sales transaction, deliver your product(s), and administer your account. From time to time, we may also offer you other Statistics Canada products and services and conduct market research. If you do not wish to be contacted again for promotional purposes ☐ and/or market research, ☐ check as appropriate and fax or mail this page to us, call 1 800 700-1033 or e-mail order@statcan.ca.

Subtotal

GST (7%) - (Canadian clients only, where applicable)

Applicable PST (Canadian clients only, where applicable)

Applicable HST (N.S., N.B., Nfld.)

Grand Total

ALL PRICES EXCLUDE SALES TAXES.

Cheque or money order should be made payable to the Receiver General for Canada.

PF 6363



Statistics Canada
Statistique Canada

Canada

Key labour and income facts

Selected charts and analysis

This section presents charts and analysis featuring one or more of the following sources. For general inquiries, contact Joanne Bourdeau at (613) 951-4722 or bourjoa@statcan.ca.

Administrative data

Small area and administrative data

Frequency: Annual

Contact: Customer Services

(613) 951-9720

Business surveys

Annual Survey of Manufactures

Frequency: Annual

Contact: Richard Vincent

(613) 951-4070

Business Conditions Survey of Manufacturing Industries

Frequency: Quarterly

Contact: Claude Robillard

(613) 951-3507

Census

Census labour force characteristics

Frequency: Quinquennial

Contact: Michel Côté

(613) 951-6896

Census income statistics

Frequency: Quinquennial

Contact: Abdul Rashid

(613) 951-6897

Employment and income surveys

Labour Force Survey

Frequency: Monthly

Contact: Marc Lévesque

(613) 951-2793

Survey of Employment, Payrolls and Hours

Frequency: Monthly

Contact: Sylvie Picard

(613) 951-4090

Help-wanted Index

Frequency: Monthly

Contact: Sylvie Picard

(613) 951-4090

Employment Insurance

Statistics Program

Frequency: Monthly

Contact: Sylvie Picard

(613) 951-4090

Major wage settlements

Bureau of Labour Information

(Human Resources

Development Canada)

Frequency: Quarterly

Contact: (819) 997-3117

1 800 567-6866

Labour income

Frequency: Quarterly

Contact: Anna MacDonald

(613) 951-3784

Survey of Labour and Income Dynamics

Frequency: Annual

Contact: Client Services

(613) 951-7355 or

1 888 297-7355

Survey of Consumer Finances

Frequency: Annual

Contact: Client Services

(613) 951-7355 or

1 888 297-7355

Survey of Household Spending
(replaces *Household Facilities and Equipment Survey* and *Family Expenditure Survey*)

Frequency: Annual

Contact: Client Services

(613) 951-7355 or

1 888 297-7355

General Social Survey

Education, work and retirement

Frequency: Occasional

Contact: Client Services

(613) 951-5979

Social and community support

Frequency: Occasional

Contact: Client Services

(613) 951-5979

Time use

Frequency: Occasional

Contact: Client Services

(613) 951-5979

Pension surveys

Pension Plans in Canada Survey

Frequency: Annual

Contact: Thomas Dufour

(613) 951-2088

Quarterly Survey of Trusteed Pension Funds

Frequency: Quarterly

Contact: Bob Anderson

(613) 951-4034

Special surveys

Survey of Work Arrangements

Frequency: Occasional

Contact: Ernest B. Akyeampong

(613) 951-4624

Adult Education and Training Survey

Frequency: Occasional

Contact: Client Services

(613) 951-7355 or

1 888 297-7355

Graduate Surveys

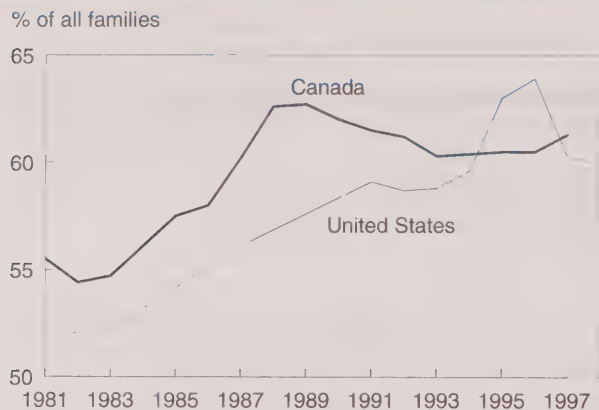
(Postsecondary)

Frequency: Occasional

Contact: Bill Magnus

(613) 951-4577

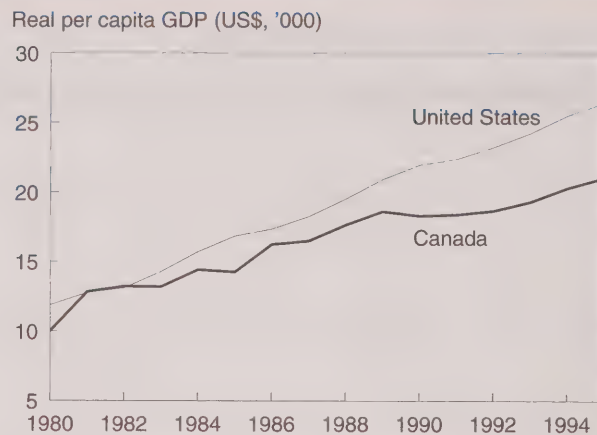
The proportion of dual-earner families is similar in Canada and the United States.



Sources: Survey of Consumer Finances; U.S. Current Population Survey

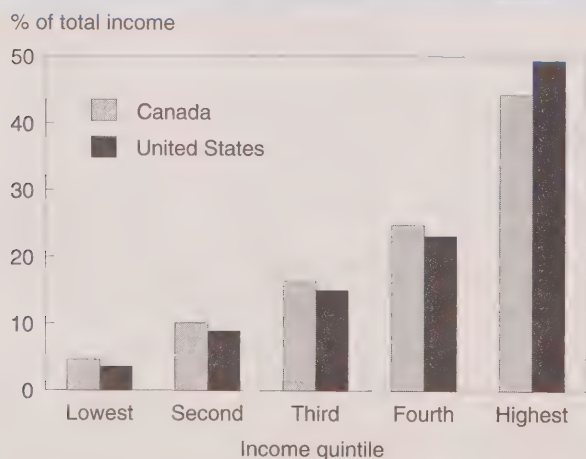
Note: Data for the United States exclude 1982, 1984 to 1986, and 1988 to 1990.

Real per capita GDP is higher in the United States.



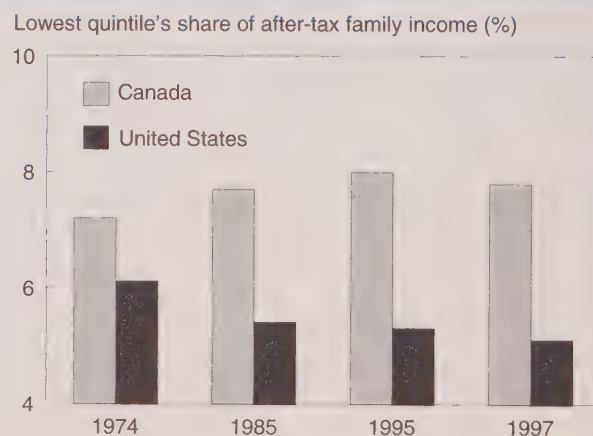
Sources: Census of Canada; Labour Force Survey; Income and Expenditure Accounts; U.S. Survey of Current Business

In 1996, higher income families received a larger share of total income in the United States.



Sources: Survey of Consumer Finances; U.S. Current Population Survey

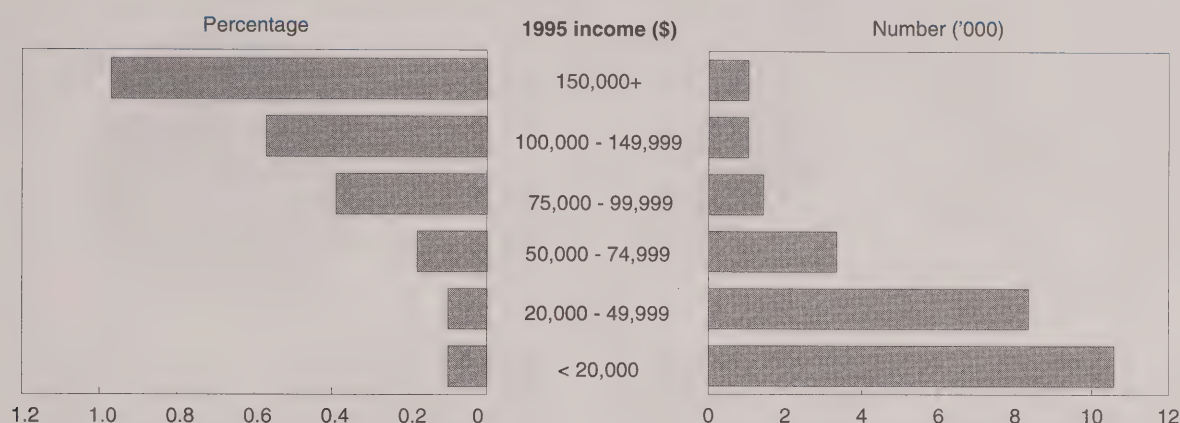
Lower income families have a higher share of after-tax income in Canada.



Sources: Survey of Consumer Finances; U.S. Current Population Survey

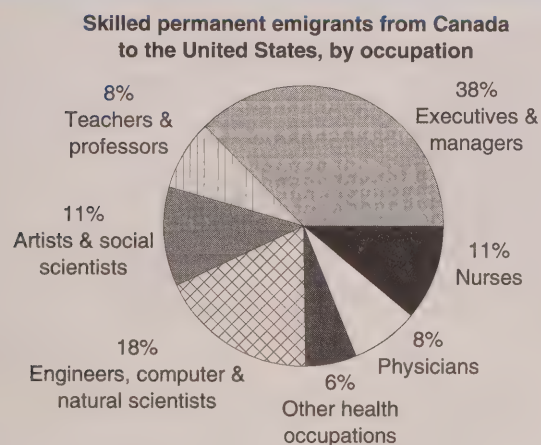
Top income earners have left in higher proportions, but in relatively small numbers.

Taxfilers who ceased to reside in Canada in 1996



Sources: Small Area and Administrative Data Division

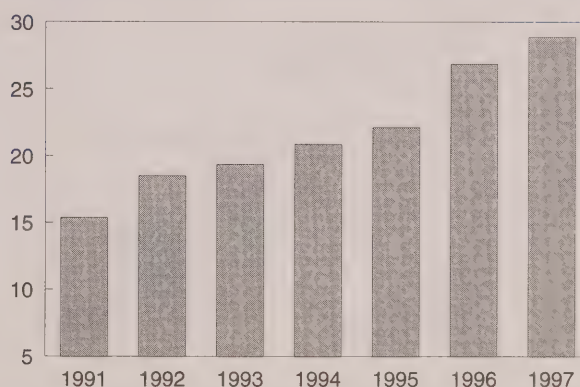
Executives and health professionals made up over half the emigrants from Canada to the United States in 1997.



Source: U.S. Immigration and Naturalization Service

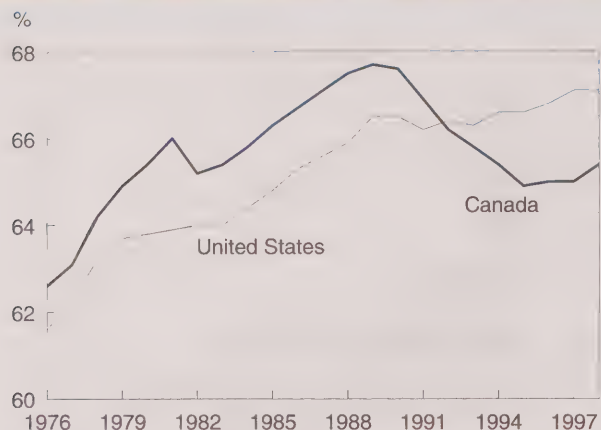
Canadian emigration to all destinations is rising.

Taxfilers who ceased to reside in Canada ('000)



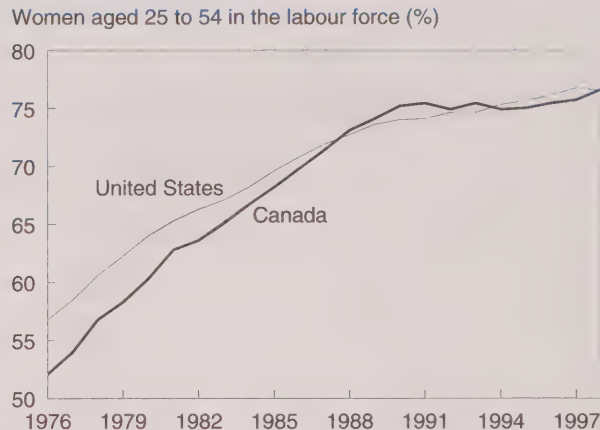
Source: Small Area and Administrative Data Division

Canada's labour force participation rate in the 1990s was lower than that of the United States.



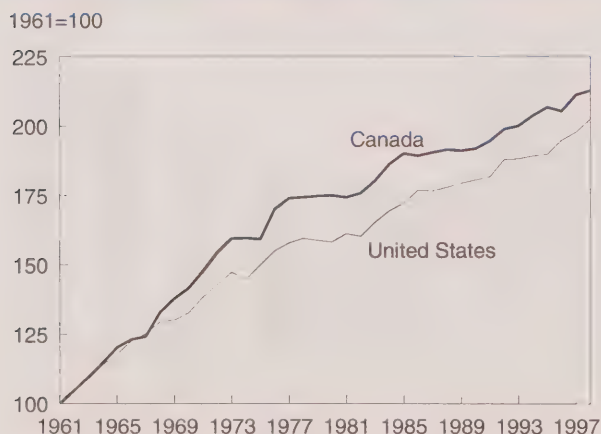
Sources: Labour Force Survey; U.S. Bureau of Labor Statistics

The influx of women into the labour force stabilized in the 1990s.



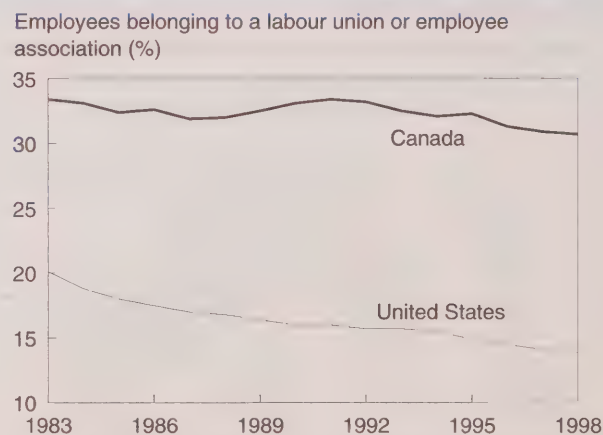
Sources: Labour Force Survey; U.S. Bureau of Labor Statistics

Growth in labour productivity in the business sector has been similar in both countries.



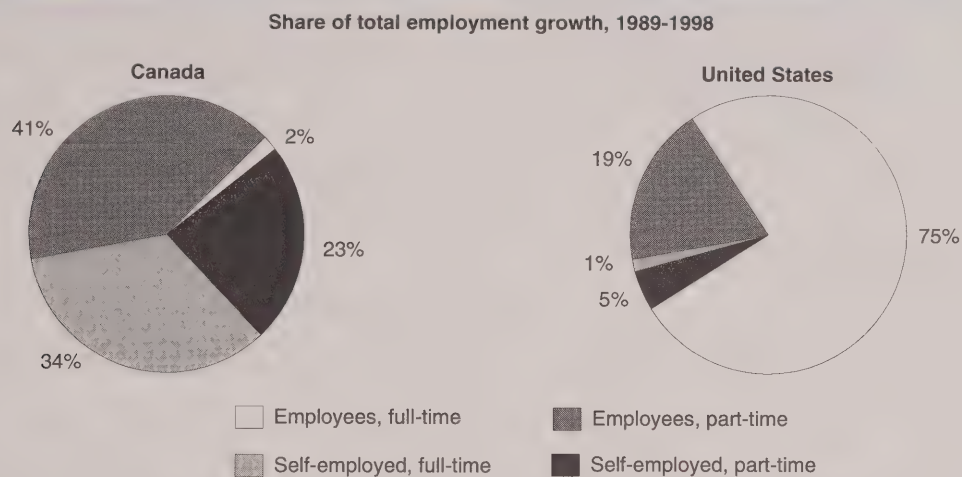
Sources: Micro-economic Studies; U.S. Bureau of Labor Statistics

Unionization has been higher in Canada.



Sources: Labour Force Survey; U.S. Current Population Survey

Recent job growth in Canada and the United States has differed.



Sources: Labour Force Survey; U.S. Bureau of Labor Statistics

High-skill jobs have grown more rapidly than other occupations.

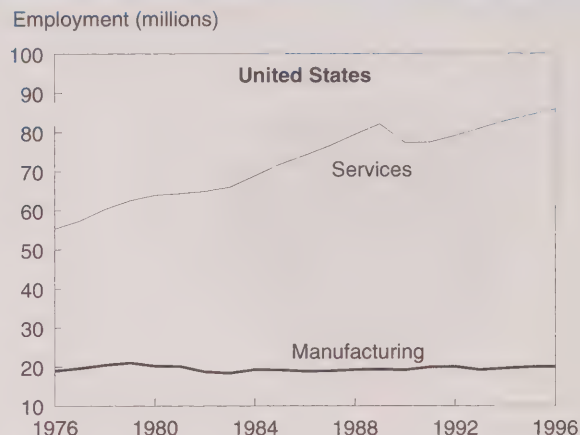
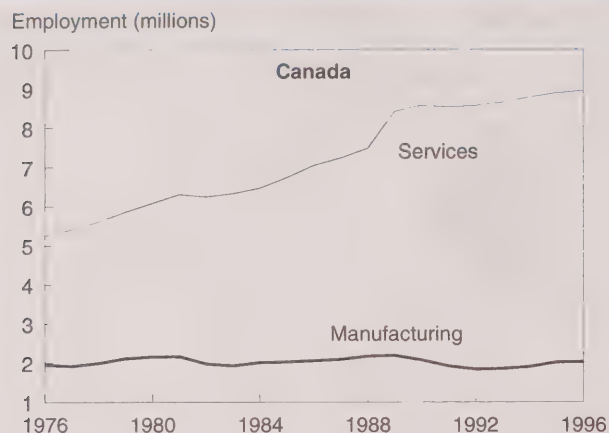


High-skill: managerial, professional and technical

Blue-collar: construction, processing, transportation and materials handling

Sources: Labour Force Survey; U.S. National Household Education Survey

Employment growth has been in service industries.



Sources: Labour Force Survey; U.S. Survey of Current Business

Gap between Canadian and U.S. unemployment rates widened during the 1990s.



Sources: Labour Force Survey; U.S. Bureau of Labor Statistics

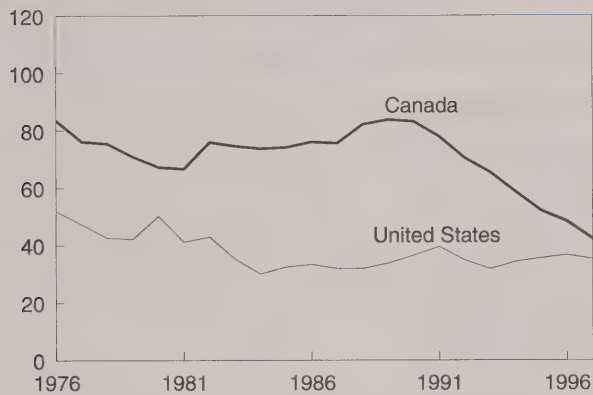
Widening gap in the employment rate favoured the United States.



Sources: Labour Force Survey; U.S. Current Population Survey

Employment insurance coverage in both countries has converged.

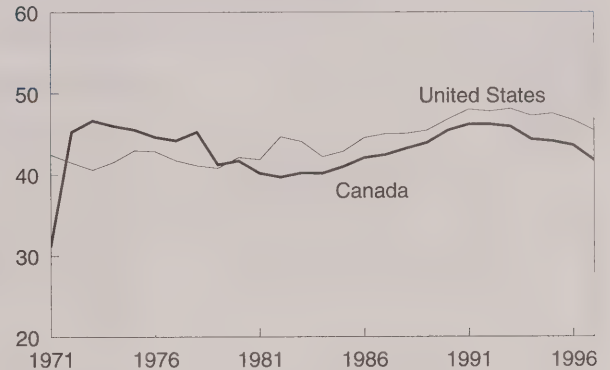
Ratio of regular beneficiaries to total unemployed



Sources: Employment Insurance statistics; Labour Force Survey; U.S. Social Security Administration

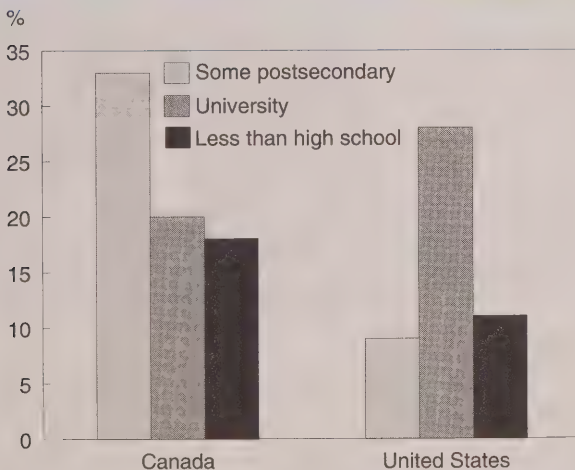
Earnings replacement rates are alike in Canada and the United States.

Average weekly benefits compared with average weekly earnings (%)



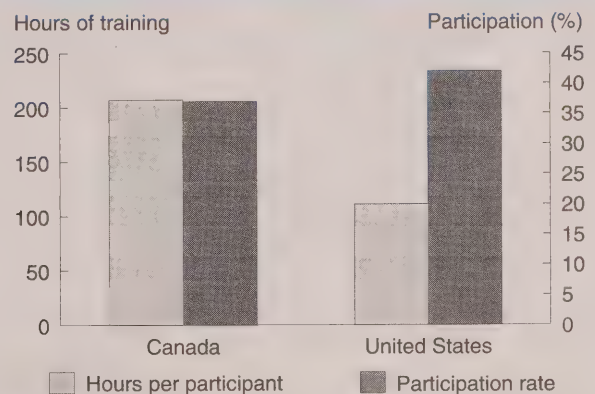
Sources: Employment Insurance statistics; Survey of Employment, Payrolls and Hours; U.S. Social Security Administration

Both higher and lower levels of education are more prevalent in the Canadian labour force.



Sources: Labour Force Survey; U.S. Current Population Survey

Canadian adults spend more time in education and training, but are less likely than Americans to take courses.



Sources: Labour Force Survey; U.S. National Household Education Survey

Charts were adapted from "Canada-U.S. quality of life and policy comparisons," produced by Human Resources Development Canada and Statistics Canada. For more information, contact Rachel Exeter, Special Surveys Division, at (613) 951-4594; fax: (613) 951-4527; rachel.exeter@statcan.ca, or Mark Hopkins, Human Resources Development Canada, at (819) 994-4511; fax: (819) 994-4533; mark.hopkins@spg.org.

Treat data like dollars!

Invest in *Canadian Economic Observer* and get immediate returns and long-term benefits!



Accurate data and insightful analysis are the hallmarks of sound decisions and successful business practices. They are also hallmarks of *Canadian Economic Observer (CEO)*. So, when tracking the activity of the Canadian economy is essential to your organization's success, count on *Canadian Economic Observer* — the monthly journal that can help you manage economic information effectively — just like you manage your dollars.

Value for Money — Every Month

Each month you will receive *CEO*'s two-part briefing package on the economy.

Part One is in an easy-to-read magazine format filled with data and analysis, supported by tables and charts. Every issue contains:

- ▶ a summary table of current economic conditions
- ▶ concise sector-by-sector analysis of economic indicators
- ▶ developments in provincial as well as international economies
- ▶ highlights of economic events at home and abroad
- ▶ one or more feature articles spotlighting major issues or industry sectors



Part Two is a separate companion volume — *The Statistical Summary*:

- ▶ hard numbers in tabular form on markets, prices, industrial sectors, trade competitiveness and much more
- ▶ more than 1,100 economic indicators
- ▶ monthly data for the calendar year in review
- ▶ user-friendly tables and graphs

Satisfaction Guaranteed!

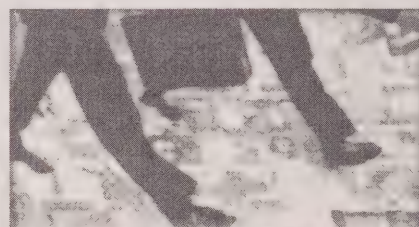
- ▶ As a subscriber, you'll be connected to Statistics Canada's economic analysts — answers to your questions related to either

data or feature articles contained in *CEO* are just a phone call away.

- ▶ Discounts for multi-year subscribers — and as a bonus for subscribing, we'll give you a copy of *CEO*'s annual *Historical Statistical Summary*.
- ▶ Subscribing to *CEO* is a risk-free investment! At any time and for any reason, you may cancel your subscription and receive a refund on all undelivered copies...no questions asked.

Start your subscription today!

Prove to yourself that an investment in data will pay off handsomely.



Subscribe to the Canadian Economic Observer

(Catalogue No. 11-010-XPB) TODAY for only \$227. In Canada, please add **either** GST and applicable PST or HST. Shipping charges: No shipping charges for delivery in Canada. For shipments to the United States, please add \$72. For shipments to other countries, please add \$120. **CALL TOLL-FREE** 1 800 267-6677 or **FAX** 1 877 287-4369. You can also **MAIL** your order to: Statistics Canada, Circulation Management, Dissemination Division, 120 Parkdale Ave., Ottawa, Ontario, K1A 0T6, Canada or contact your local Statistics Canada Regional Reference Centre listed within this publication.

Visit the *CEO* Web site for further details:
<http://www.statcan.ca/english/ads/11-010-XPB/index.htm>

In the works

Some of the topics in upcoming issues

■ Additional dimensions of unemployment

The official unemployment rate focuses on the individual as a unit of measurement and is based on data from a monthly survey. However, other units of measure or different time horizons may be needed to reflect the complexity of the labour market and to satisfy the many needs of policy makers and labour market analysts. This article looks at some possible candidates.

■ In for the long term

Employer-sponsored pension plans are the major source of retirement income for millions of Canadians. As a pool of investment capital (\$400 billion), they are second in size only to the financial assets of the chartered banks (\$820 billion). This article briefly describes the pension plans offered by employers and places them in the context of other major retirement income programs.

■ Unionization

Our annual update looks at union membership versus union coverage, including some international comparisons.

■ *Perspectives* online

A monthly online version of *Perspectives* is planned for Autumn 2000. While several sections will be available free of charge, the featured article(s) will be accessible only for a fee. Subscribers to the quarterly print publication will continue to receive their issues.

■ Website to provide back issues of *Perspectives*

An archive of all *Perspectives* issues will soon be available on our website (www.statcan.ca) through the "In depth" link.

PERSPECTIVES ON LABOUR AND INCOME

The quarterly for labour market and income information

PERSPECTIVES

ON LABOUR AND INCOME

THE COMPREHENSIVE JOURNAL

on labour and income
from Statistics Canada

- ☐ Yes, I want PERSPECTIVES ON LABOUR AND INCOME
(Catalogue no. 75-001-XPE).

Subscribe to *Perspectives on Labour and Income* today!

Save
by extending your
subscription!

Save 20%
by subscribing for 2 years!
Only \$92.80 (plus taxes)

Save 30%
by subscribing for 3 years!
Only \$121.80
(plus taxes)



ORDER FORM



MAIL

Statistics Canada
Circulation Management
120 Parkdale Avenue
Ottawa, Ontario
Canada K1A 0T6



PHONE

1 800 267-6677
Charge to VISA or MasterCard.
Outside Canada and the U.S.,
and in the Ottawa area, call
(613) 951-7277.



FAX

1 800 889-9734
(613) 951-1584



E-MAIL

order@statcan.ca

Please do not send confirmation for phone or fax orders.

Name _____
Company _____ Department _____
Address _____ City _____ Province _____
Postal Code _____ Phone _____ Fax _____

Catalogue No.	Title
75-001-XPE	Perspectives on Labour and Income

ALL PRICES EXCLUDE SALES TAXES.

Canadian clients add 7% GST and applicable PST or HST.
GST # R121491807.

Cheque or money order should be made payable to the Receiver General for Canada.
PF 097042

METHOD OF PAYMENT (Check only one)

☐ Charge to my: ☐ MasterCard ☐ VISA

Card Number _____

Authorized Signature _____

Expiry Date _____

Cardholder (Please print) _____

☐ Payment Enclosed \$ _____

☐ Purchase Order Number _____

Authorized Signature _____

Subscription	Price (CDN \$)	Quantity	Total CDN \$
1 year	58.00		
2 years	92.80		
3 years	121.80		
Subtotal			
GST (7%) - (Canadian clients only, where applicable)			
Applicable PST (Canadian clients only, where applicable)			
Applicable HST (N.S., N.B., Nfld.)			
Shipping charges U.S. CDN \$24, other countries CDN \$40			
Grand Total			

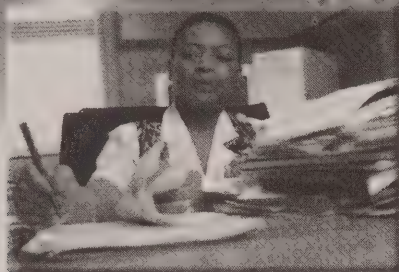


Statistics Canada Statistique Canada

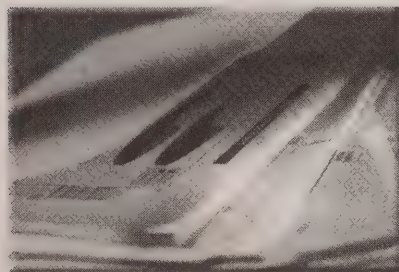
Canada

INFORMATION

IS YOUR PASSPORT TO SUCCESS



- ▶ IT GIVES YOUR BUSINESS THE COMPETITIVE EDGE.
- ▶ IT MAKES YOUR SOCIAL PROGRAMS RELEVANT AND BENEFICIAL.
- ▶ IT KEEPS YOU ON TOP OF CURRENT ISSUES AND CONCERNS.



DEPEND ON THE MOST RELIABLE SOURCE

For developing business plans and market strategies, keeping abreast of social and economic trends or establishing an excellent information resource from which to draw, we've got your answer!



ADVISORY SERVICES

Our expert consultants are available to help you make the most of your Statistics Canada experience. We will:

- ✓ work with you to define your needs.
- ✓ sift through our vast resources and put together an information package designed to meet those needs.
- ✓ analyze and interpret your customized data packages.
- ✓ even conduct surveys tailored to your specialized requirements.



DRAW ON OUR EXPERTISE

Contact the Reference Centre nearest you to find out how to get prepared for your journey into the future!



National toll-free enquiries line:
1 800 263-1136

National TTY line: 1 800 363-7629

E-Mail: infostats@statcan.ca

PERSPECTIVES

ON LABOUR AND INCOME

To keep up with ...

- the education levels and the training of the labour force in Canada
- the distribution of income and trends in wages in the country
- updates on research under way in the labour and income field
- the availability of new income and labour market data

... you need

PERSPECTIVES ON LABOUR AND INCOME (Catalogue no. 75-001-XPE) from Statistics Canada.

A yearly subscription to **Perspectives on Labour and Income** (four issues) costs just \$58.

Mail your order to Statistics Canada, Operations and Integration Division, Circulation Management, 120 Parkdale Avenue, Ottawa, Ontario K1A 0T6. Or FAX **1 (613) 951-1584** or **1 800 889-9734**, or call toll free **1 800 267-6677** and use your VISA or MasterCard. E-mail: **order@statcan.ca**



PERSPECTIVES

ON LABOUR AND INCOME

75-001

AUTUMN 2000

Vol. 12, No. 3

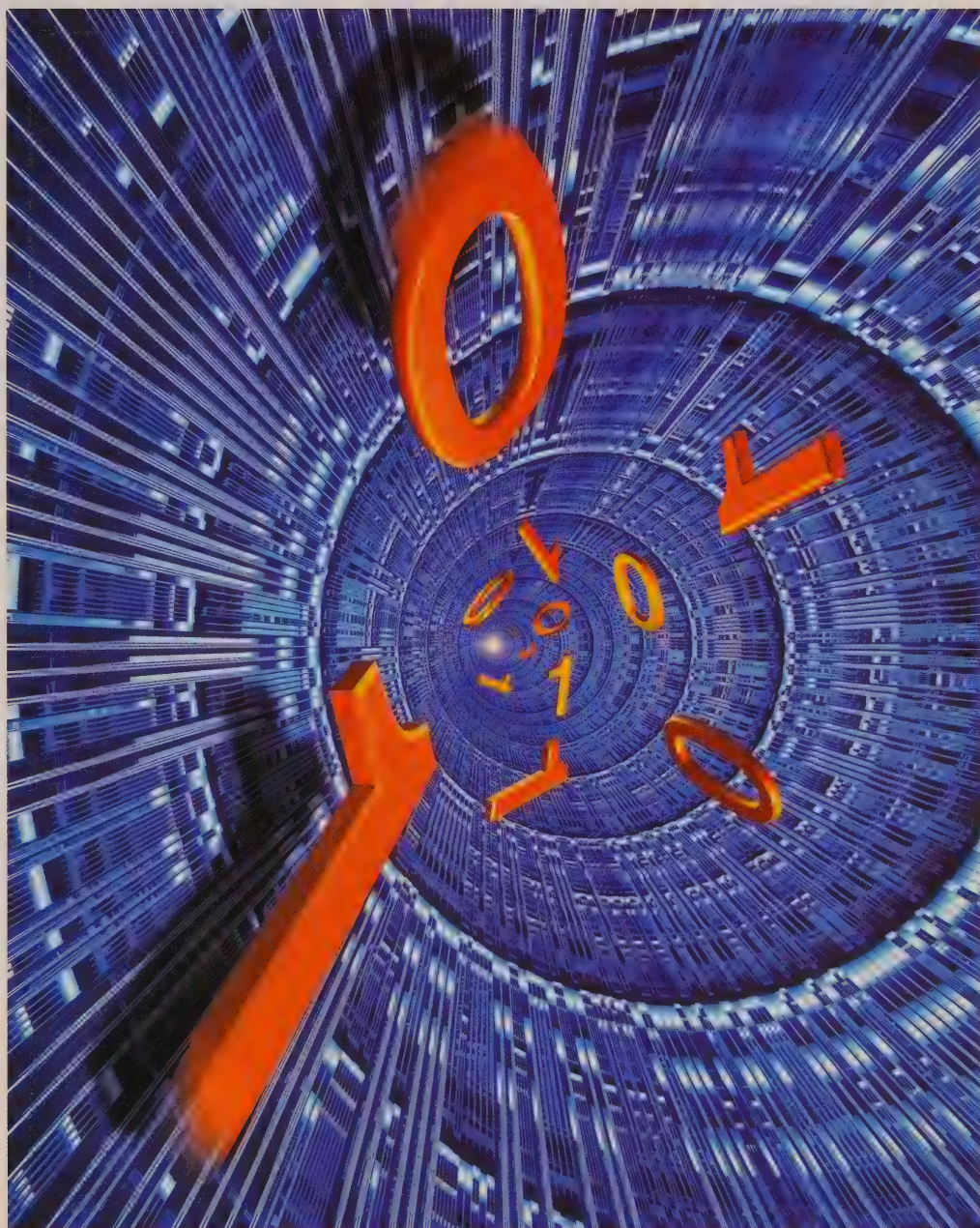
■ UNEMPLOYMENT
KALEIDOSCOPE

■ TAXES
INTERNATIONALLY

■ PAYROLL TAXES

■ UNIONIZATION

■ RURAL ROOTS



Statistics
Canada

Statistique
Canada

Canada

At Your Service...

Data in many forms

Statistics Canada disseminates data in a variety of forms. In addition to publications, both standard and special tabulations are offered. Data are available on the Internet, compact disc, diskette, computer printouts, microfiche and microfilm, and magnetic tape. Maps and other geographic reference materials are available for some types of data. Direct online access to aggregated information is possible through CANSIM, Statistics Canada's machine-readable database and retrieval system.

Statistics Canada's Regional Reference Centres in Canada's major cities

Halifax	(902) 426-5331	Regina	(306) 780-5405
Montréal	(514) 283-5725	Edmonton	(780) 495-3027
Ottawa	(613) 951-8116	Calgary	(403) 292-6717
Toronto	(416) 973-6586	Vancouver	(604) 666-3691
Winnipeg	(204) 983-4020		

You can also visit our World Wide Web site: <http://www.statcan.ca>

For information on the wide range of data available from Statistics Canada, you can contact us by calling one of our toll-free numbers. You can also contact us by e-mail or by visiting our Web site.

National inquiries line	1 800 263-1136
National telecommunications device for the hearing impaired	1 800 363-7629
Depository Services Program inquiries	1 800 700-1033
Fax line for Depository Services Program	1 800 889-9734
E-mail inquiries	infostats@statcan.ca
Web site	www.statcan.ca

Ordering/Subscription information

This product can be ordered by

- Phone (Canada and United States) 1 800 267-6677
- Fax (Canada and United States) 1 877 287-4369
- E-mail order@statcan.ca
- Mail Statistics Canada
Dissemination Division
Circulation Management
120 Parkdale Avenue
Ottawa, Ontario K1A 0T6
- And, in person at the Statistics Canada Regional Centre nearest you, or from authorized agents and bookstores.

When notifying us of a change in your address, please provide both old and new addresses.

Standards of service to the public

Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner and in the official language of their choice. To this end, the agency has developed standards of service which its employees observe in serving its clients. To obtain a copy of these service standards, please contact Statistics Canada toll free at 1-800-263-1136.

PERSPECTIVES

ON LABOUR AND INCOME

■ Departments

- 3 Forum
- 5 Highlights
- 69 What's new?
- 81 Key labour and income facts
Supplementary measures of unemployment

Perspectives on Labour and Income
(Catalogue no. 75-001-XPE; aussi disponible en français: *L'emploi et le revenu en perspective*, n° 75-001-XPF au catalogue) is published quarterly by authority of the Minister responsible for Statistics Canada. ©Minister of Industry 2000. ISSN: 0840-8750.

SUBSCRIPTION RATES: CDN \$18.00 per issue, CDN \$58.00 for a one-year subscription.

Shipping charges outside Canada:

	Single issue	Annual subscription
United States	CDN \$ 6.00	CDN \$24.00
Other countries	CDN \$10.00	CDN \$40.00

All prices exclude sales taxes.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any other means, electronic, mechanical, photocopying, recording or otherwise, without prior written permission from Licence Services, Marketing Division, Statistics Canada, Ottawa, Ontario, Canada K1A 0T6.

Indexed in the *Canadian Index*, *Canadian Periodical Index*, *P.A.I.S. International*, *Sociological Abstracts*, *Econlit*, *Canadian Business and Current Affairs* and *Employee Benefits Infosource*. Also indexed in French in *L'Index de l'Actualité* and *Point de Repère*.

■ Articles

9 Unemployment kaleidoscope

Deborah Sussman

Changing the focus—from the individual to the family, from one week to one year—can dramatically alter perceptions of unemployment. This article compares alternative measures with the official rate over the last two decades.

16 Taxes internationally

Zhengxi Lin

Some taxes may be higher, some lower than in other developed nations, but overall Canada's effective tax rate is middle-of-the-road. Using OECD data, this study compares several tax-to-GDP ratios of the G-7 and the 29 OECD countries.

21 Payroll taxes—recent trends

Zhengxi Lin

Payroll taxes vary widely in level and growth across the provinces. Of the nine taxes, only three are nationwide. This article looks at trends across the country. It also briefly compares total Canadian payroll taxes with those of other G-7 and OECD nations.



Editor-in-Chief

Ian Macredie
(613) 951-9456
ian.macredie@statcan.ca

Managing Editor

Henry Pold
(613) 951-4608
henry.pold@statcan.ca

Editors

Catherine Hardwick
Bruce Rogers

Data Services

Pierre Bérard
Joanne Bourdeau
Laura Fraser

Production and Composition

Heather Berrea
Cynthia Fortura
Diane Joannis
Annamma John
Ann Trépanier

Printing

Dissemination Division

Symbols

The following standard symbols are used in Statistics Canada publications:

- figures not available
- ... figures not appropriate or not applicable
- nil or zero
- amount too small to be expressed
- p preliminary figures
- r revised figures
- x confidential to meet secrecy requirements of the Statistics Act

The paper used in this publication meets the minimum requirements of American National Standard for Information Sciences – Permanence of Paper for Printed Library Materials, ANSI Z39.48 – 1984.

33 Non-unionized but covered by collective agreement

Ernest B. Akyeampong

This article examines the issue of non-union members who are covered by collective agreements, comparing the Canadian picture in the late 1990s with that of the United States. An accompanying update, which covers the first half of 2000, provides *Perspectives'* annual socio-demographic and economic profile of union members.

60 Rural roots

Richard Dupuy, Francine Mayer and René Morissette

For some time, concerns have been raised about the movement of young people away from rural areas, mainly to find work. This article provides information on the extent to which youths stay, leave or return to rural communities. (Adapted from a recently published analytical report.)

Back Issues: *Did you miss something?*

Don't worry! Back issues of **Perspectives on Labour and Income** are available.

Feature articles in these issues include:

- | | |
|--------------------|--|
| Summer 2000 | Provincial earnings • Help wanted • Payroll taxes • Income taxes • Knowledge workers |
| Spring 2000 | RRSPs • Earnings of lawyers • Gambling update • Young volunteers • School-to-work • Long hours and health |
| Winter 1999 | "Copreneurs" • Truck drivers • Earnings ratios • Earnings of physicians • Exports, GDP and jobs • Cumulative index |
| Autumn 1999 | Seniors volunteering • Return to work after childbirth • Baby boom women • Missing work • Self-employment • Unionization |

For more information contact **Statistics Canada, Operations and Integration Division, Circulation Management, 120 Parkdale Avenue, Ottawa, Ontario K1A 0T6**. Or, call toll free 1 800 267-6677.

Perspectives on Labour and Income

The quarterly for labour market and income information

Forum

From the Managing Editor

■ **Perspectives on the Internet**

Beginning this autumn, a monthly version of *Perspectives* will be offered on our website (www.statcan.ca). The current quarterly paper publication will also continue. At least one article will be released in the electronic version each month. These monthly releases will then be reproduced in the quarterly paper version.

At the same time, this move means further integration of Statistics Canada's analysis of labour and income. In addition to its present content, the new *Perspectives* will integrate the contents of *Labour Force Update*, as well as articles from the Income Statistics Division and the Special Surveys Division.

Varying levels of access to articles will be provided. Abstracts and highlights, as well as author information, data sources, definitions and references, will be available free of charge. The full-length article will be downloadable and viewable for a fee. Our regular departments, "Key labour and income facts" and "What's new?" (to be renamed "Upcoming"), will also continue in the new version.

A "Past articles/Search" function will give users the option of viewing (again, for a fee) up to 11 previous issues in addition to the current one. Twelve months following their initial release, articles will be moved to a fully searchable historical "bin" that will be accessible free of charge. Articles dating back to the first issue of *Perspectives* in 1989 will also be available in this bin and organized so that they can be searched by theme, author or date.

The subscription process will remain unchanged for the quarterly paper publication. Users will have the option to subscribe separately to the monthly electronic version. As always, we welcome your comments and suggestions for this new online publication. For more information on this initiative, please contact Joanne Pilon, Labour and Household Surveys Analysis Division, at (613) 951-8659; pilojoa@statcan.ca.

Henry Pold
Managing Editor
E-mail: henry.pold@statcan.ca

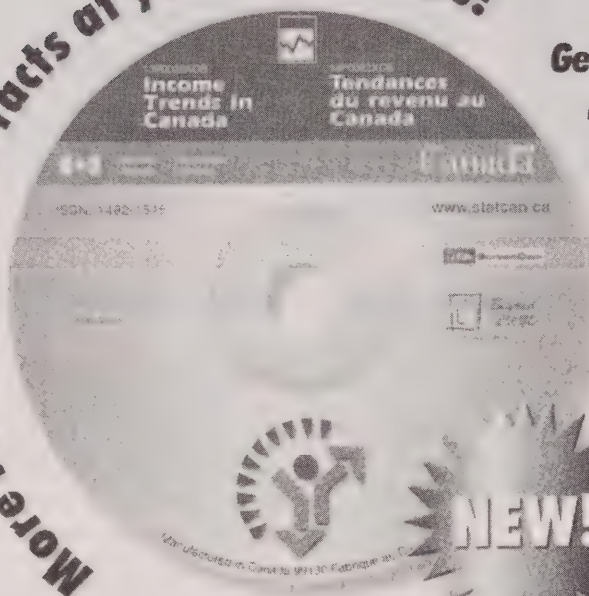
Perspectives

We welcome your views on articles and other items that have appeared in *Perspectives*. Additional insights on the data are also welcome, but to be considered for publication, communications should be factual and analytical. We encourage readers to inform us about their current research projects, new publications, data sources, and upcoming events relating to labour and income.

Statistics Canada reserves the right to select and edit items for publication. Correspondence, in either official language, should be addressed to Bruce Rogers, "What's new?" *Perspectives on Labour and Income*, 9th floor, Jean Talon Building, Statistics Canada, Ottawa K1A 0T6. Telephone (613) 951-2883; fax (613) 951-4179; e-mail: bruce.rogers@statcan.ca.

Income Trends in Canada

More than 2,000,000 facts at your fingertips!



Get the overall picture with nearly two decades of data for Canada, the provinces and 15 metropolitan areas

For \$195, you will find everything you need to know about income trends covering 1980 to 1997, through two recessions and recovery periods! Get accurate and reliable statistics about:

- income from employment... and other sources
- taxes
- impact of government transfers on family income
- differences in earnings between women and men
- income of Canada's seniors
- income inequality and low income
- and a lot more!

In these times of budget challenges, it is more crucial than ever before to understand income trends of Canadians

With *Income Trends in Canada*, tracking and understanding developments in Canadian incomes is easy!

Use this CD-ROM to view trends with one mouse click. Create your own tables. Chart income data. And more!

Need more details? Check out *Income Trends in Canada* on our Web site at <http://www.statcan.ca/english/ads/13F0022XCB/index.htm> or contact your nearest Statistics Canada Regional Reference Centre at 1 800 263-1136.



Order *Income Trends in Canada* TODAY

(catalogue number 13F0022XCB) for \$195. In Canada, please add **either** GST and applicable PST **or** HST. Shipping and handling outside Canada: For shipments to the United States, please add \$6. For shipments to other countries, please add \$10. To order, CALL 1 800 267-6677, FAX 1 877 287-4369 or MAIL: Statistics Canada, Circulation Management, Dissemination Division, 120 Parkdale Avenue, Ottawa, Ontario, Canada, K1A 0T6. You may also order by E-MAIL: order@statcan.ca.

Highlights

In this issue

■ Unemployment kaleidoscope ... p. 9

- Unemployment can be measured in a number of ways. In addition to counting individuals out of work or looking for work, some analysts may include the families of those people (as they too may be affected). The period over which labour force status is measured is another important dimension of unemployment. As well as the standard one-week period, a one-year reference can be used.
- Family-based unemployment rates are consistently higher than individual-based ones, reflecting the family's greater exposure to the labour force and to the possibility of experiencing unemployment.
- Unemployment based on a one-year reference period also produces higher estimates of unemployment than the traditional one-week reference period. In general, annual rates tend to be almost double.

■ Taxes internationally ... p. 16

- Personal income taxes constituted 38% of Canada's overall taxation of \$325 billion in 1997. Taxes on goods and services accounted for 24%.
- In 1997, Canada's overall taxes as a percentage of gross domestic product (GDP) matched the G-7 average—higher than those of Japan, the United States or the United Kingdom.
- Personal tax amounted to 14% of Canada's GDP in 1997, the highest ratio among the world's richest nations.

- Corporate taxes amounted to 3.8% of GDP, a ratio that was in the middle of the G-7 pack.
- Payroll taxes totalled 5.7% of GDP, the lowest ratio among the G-7.
- The property tax-to-GDP ratio in Canada was the second highest of the G-7.
- Canada's goods and services tax ratio was nearly double that of Japan or the United States, but lower than those of the other four G-7 countries.

■ Payroll taxes—recent trends ... p. 21

- Total payroll taxes collected from employees and employers amounted to over \$48 billion in 1997—an average of \$4,200 per wage-earner.
- Quebec led the provinces, with taxes averaging over \$5,000. The lowest average taxes were in Prince Edward Island, New Brunswick and Saskatchewan.
- Payroll taxes stabilized at 5.7% of GDP (at market prices) after 1992, up from 2.8% in 1980. The highest rates were in the provinces with their own levies: 7.4% in Quebec, 6.1% in Newfoundland, 5.6% in Ontario and 5.5% in Manitoba.
- Revenues generated through payroll taxes accounted for 14% of all federal and provincial government revenues in 1996. They were much higher in Quebec and Ontario (16.1% and 15.4%) than in Saskatchewan or New Brunswick (9.3% and 9.6%).
- Employment Insurance premiums amounted to \$19.7 billion in 1997, accounting for 41% of total payroll tax revenues. Canada and Quebec Pension Plan (C/QPP) contributions accounted for 32%.

- Quebec had the highest effective payroll tax rate. For every \$100 of wages and salaries, employees and employers in that province paid \$16.08 in 1997. Alberta had the lowest effective rate at \$8.78 per \$100.
- The total effective payroll tax rate more than doubled between 1980 and 1997, from \$5.61 per \$100 of wages and salaries to \$12.23. Almost half the jump was due to rising Employment Insurance premiums, and one-quarter to increasing C/QPP contributions.

■ Non-unionized but covered by collective agreement ... p. 33

- In 1999, union membership in Canada totalled 3.6 million. An additional 287,000 employees who were not union members occupied jobs that were covered by collective agreements, and thus were entitled to union-negotiated settlements. The latter group, referred to in this study as "coverage-only" employees, constituted 7.4% (or one in 13) of all persons whose jobs were covered by a collective agreement.
- Coverage-only status is possible through any of four broad ways: by exercising rights provided under the "Rand Formula"; by being declared covered, as in the case of many foremen/women, supervisors or lower level managers; by virtue of serving a probationary period (especially newly hired employees); and through the extension or matching practices used by some employers for certain out-of-scope employees.
- In 1999, the chances of being covered by union-negotiated settlements without belonging to a union were higher for young employees, workers with short job tenure, those with more education, and workers in managerial, professional and scientific positions. The likelihood was almost non-existent among nurses and teachers.
- The proportion of women in jobs with coverage-only status was slightly lower than that of men. And the proportion for employees in the heavily unionized public sector was about half that of their counterparts in the private sector (one in 20 versus one in 10).

- The practice was also more common in Quebec and Alberta. Indeed, over 40% of all coverage-only employees in Canada resided in Quebec in 1999. It was least common in the Atlantic provinces.

- Although union density is lower in the United States, the coverage-only rate is higher there than in Canada: approximately one in 10 employees with a job covered by a collective agreement had coverage-only status in 1999, compared with one in 13 in Canada.

■ Rural roots ... p. 60

- Labour market conditions are less favourable in rural areas. In 1996, the unemployment rate of people aged 15 to 29 who were not full-time students was 16.8% in rural areas, compared with only 11.9% in urban areas.
- All provinces saw a net loss of teenagers (aged 15 to 19) from their rural communities in the early 1990s, particularly Newfoundland and Saskatchewan.
- During the 1991-to-1996 period, roughly 30% of rural teenagers left their communities, compared with less than 20% of their urban counterparts.
- In all provinces except Newfoundland, persons leaving rural communities were more likely to go to an urban area within their province.
- Return migration has a limited effect on the rural population: only 20% to 22% of leavers in this study were back in their community 10 years later. Rural areas must therefore rely on inflows from other (primarily urban) areas to maintain their population.
- Persons who leave rural areas experience greater earnings growth than those who stay. For example, persons aged 25 to 29 in 1993 who left their rural community saw their earnings increase by 22% (or \$4,400) between 1993 and 1997, compared with only 16% (or \$2,900) for their counterparts who stayed in the community.

■ What's new?

... p. 69

■ Just released

Censuses of Canada, 1665 to 1871, Statistics of Canada, Volume IV

Inter-Corporate Ownership

Patterns of Corporate Diversification in Canada: An Empirical Analysis

"Income inequality in North America: Does the 49th parallel still matter?" *Canadian Economic Observer*

Interwar Labour Database

A Dynamic Analysis of the Flows of Canadian Science and Technology Graduates into the Labour Market

An Analysis of Science and Technology Workers: Deployment in the Canadian Economy

Sub-provincial Employment Dynamics

The Cost of Independence: Socio-economic Profiles of Independent Truck Drivers

Annual Estimates of Employment, Earnings and Hours 1983-1999

Self Sufficiency Project

Publicly Available Data Resources on the Nonprofit Sector in Canada

Voluntary Organizations in Ontario in the 1990s

Distinguishing Characteristics of Active Volunteers in Canada

Education at a Glance: OECD Indicators, 2000 Edition

Education in Canada, 1999

Schooling, Literacy and Individual Earnings

Literacy in the Information Age

Agriculture Economic Statistics Supplement

Extraction System of Agricultural Statistics

Trusteed Pension Funds, Financial Statistics

Income in Canada, 1998

Survey of Household Spending Public-use Microdata File, 1998

1998 User Guide for the Survey of Household Spending

Note to Former Users of Data from the Family Expenditure Survey

Note to Former Users of Data from the Household Facilities and Equipment Survey

■ Upcoming conference

Canadian International Labour Network (CILN) Conference

Perspectives

DISCOVER

labour market trends in seconds

When you need a snapshot of the labour market

...when you need quick answers or in-depth analysis
 ...when you need to see historical movements
 ...when you need labour-related data for a presentation or report
 ...you'll find that the **Labour Force Historical Review on CD-ROM** is the perfect solution.

This easy-to-use CD-ROM, issued annually, lets you discover labour market patterns in seconds! Incorporating a user-friendly data browser, the **Labour Force Historical Review on CD-ROM** is an essential tool providing:



Accurate, timely data...

- ✱ actual and seasonally adjusted data series
- ✱ on a monthly or annual basis

...plus historical information...

- ✱ over 20 years of data (from 1976 to 1999)

- ✱ allowing you to quickly spot trends as you browse different chart displays

...in a tremendously useful format!

- ✱ with thousands of cross-classified data series

- ✱ and the functionality for easy export of the data into any spreadsheet package for data manipulation
- ✱ plus effortless analysis of this large library of multi-dimensional statistics

At the click of a mouse, access key variables, such as:

- ✱ employment and unemployment levels and rates
- ✱ demographic characteristics including age, sex, educational attainment and family variables
- ✱ national, provincial, metropolitan areas and economic regions
- ✱ industry, occupation, wages, union membership, job tenure
- ✱ workplace size and hours worked ...and much more.

As researchers, economists, analysts, consultants and planners in both private enterprise and the public sector, you will value this comprehensive information resource for your labour-related questions, analysis or forecasting.

For more detailed information on this CD-ROM, visit our Web site at <http://www.statcan.ca/english/ads/71F0004XCB/index.htm>

The **Labour Force Historical Review on CD-ROM** (catalogue no. 71F0004XCB) is available for only \$195. In Canada, please add either GST and applicable PST or HST. Shipping charges: No shipping charges for delivery in Canada. For shipments to the United States, please add \$6. For shipments to other countries, please add \$10.

To order the CD ROM, CALL 1 800 267-6677, FAX 1 877 287-4369 or MAIL your order to Statistics Canada, Dissemination Division, Circulation Management, 120 Parkdale Avenue, Ottawa, Ontario, K1A 0T6, Canada. You may also order by E-MAIL: order@statcan.ca or contact your nearest Statistics Canada Regional Reference Centre: 1 800 263-1136.

Unemployment kaleidoscope

Deborah Sussman

In recent years labour market conditions have improved considerably, resulting in a falling unemployment rate. Around the peak of the recession of the early 1990s (November 1992), 1.7 million people were unemployed in Canada (12.1% of the labour force). However, by December 1999 the unemployment rate had dropped to 6.8%, its lowest level since April 1976.¹

These figures represent the official unemployment rates published each month by Statistics Canada. They are based on the number of persons who were without work, were available for work and were actively looking for a job at any point during the reference week, or the previous three weeks, of a given month.

Although levels and trends in unemployment have traditionally been published and analyzed in this manner, no single measure can fully capture the complexity of the labour market or satisfy the numerous needs of policy makers and labour market analysts. For this reason, Statistics Canada publishes from time to time a set of supplementary measures of unemployment to illustrate additional dimensions of labour market behaviour (see this issue's "Key labour and income facts").²

What the official monthly releases and the (less familiar) supplementary measures have in common is the use of the individual as the basis of measurement and of one week per month as the reference period. However, unemployment can also be measured in other ways. For instance, because the consequences of unemployment can be felt by all family members, a look at the proportion of families with at least one unemployed member, or at the total number of people affected directly or indirectly by unemployment, may provide a more comprehensive picture of its effect.

Deborah Sussman is with the Labour and Household Surveys Analysis Division. She can be reached at (613) 951-6563 or sussdeb@statcan.ca.

The choice of reference period, that is, the period over which labour force status is measured, is another important dimension of unemployment. The standard approach is to use a one-week reference period, which is designed to provide a "snapshot" of the labour market at one point in time. Unemployment estimates are collected for one week each month (usually the week including the 15th day of the month), with each month's snapshot being independent of the others. The average of the 12 views provides an annual estimate.

Because only some of the people who are unemployed during a particular reference week will remain unemployed in the following month or months, it is not possible using this method to determine the total number who experienced unemployment at some point in the year. In contrast, a one-year reference period would capture this number. For example, if 1,000 people are unemployed during the reference week of each month of a given year, and none of them is unemployed for more than one month, so that each month a different 1,000 people are unemployed, a total of 12,000 people will have experienced unemployment at some point during the year. This number is far greater than the annual average yielded by 12 monthly snapshots (1,000).

This article examines and compares both individual and family unemployment rates generated by both the one-week and one-year reference periods over the last 20 years. It uses the monthly Labour Force Survey (LFS) for the former series and the Survey of Consumer Finances (SCF) for the latter (see *Data sources*).³ In so doing, it shows how these measures produce different results and provide alternative ways of looking at unemployment. The effect of fluctuations in the business cycle is also addressed, as are the provincial rankings of unemployment rates using the different approaches. This article builds upon the analysis published in a previous issue of *Perspectives* (Noreau, 1996).

Data sources

The **Labour Force Survey (LFS)** is a monthly household survey involving around 53,000 households across Canada (Statistics Canada, 1997). Labour force information is obtained for all civilian household members aged 15 years and older. Excluded are inmates of institutions, persons living on Indian reserves and residents of the Northwest Territories, Nunavut and Yukon. According to the LFS, a person is unemployed if, during the reference week (generally the full week that includes the 15th day of the month), he or she

was without employment, had actively looked for work during the past four weeks (including the reference week) and was available for work; or

had not actively looked for work during the past four weeks but was to begin a new job within the next four weeks; or

had not actively looked for work during the past four weeks but was on temporary layoff (temporarily released owing to business conditions, with a definite date to return to work or an expectation of recall) and was available for work.

The annual unemployment rate is the average of the 12 monthly observations.

The **Survey of Consumer Finances (SCF)** was conducted once a year, in April, as a supplement to the monthly LFS. It collected information concerning amounts and sources of income received in the previous calendar year, the survey's reference year, for all civilian household members aged 15 and over. (It was replaced by the Survey of Labour and Income Dynamics as of the 1998 reference year.) As it was a supplement to the LFS, labour force status as of April each year could be determined for most labour variables. However, the SCF also collected additional work experience data for the preceding calendar year, using three questions:

"During [the reference year], in how many weeks did ... do any work at a job or business?"

During those weeks, was the work mostly full-time or part-time?"

During [the reference year] in how many weeks was ... without work and looking for work?"

Therefore, if a person was without work and looking for work at least one week during the reference year, that person would be counted as having experienced a period of unemployment during that reference year. This way, the SCF provides estimates of unemployment that take into account labour force experience over an entire year (52 weeks).

The **Survey of Labour and Income Dynamics (SLID)** began to collect annual labour market and income data in 1993. (In the case of income data, the survey content was similar to the SCF, which is why the SCF was discontinued.) SLID adheres as much as possible to labour force concepts used by the LFS and produces labour force status estimates for each week of the reference year. A person is recorded as looking for a job if he or she did so in any week. However, unlike the LFS and SCF, SLID collects detailed job-related information only for persons aged 16 to 69. For more information on this survey, see Noreau, Hale and Giles (1997).

Compatibility of the SCF and SLID

Adjusting for the differences in age of the population surveyed, the two surveys produce similar results (differences generally being below one percentage point, with the exception of 1997). As expected, there is more variation at the provincial level, given the smaller sample sizes. Since the two surveys generate compatible estimates for individual- and family-based unemployment rates, SLID can be used to continue the series from the SCF.

	Individual unemployment rate			Family unemployment rate		
	SCF	SLID	Difference	SCF	SLID	Difference
	%			%		
1993	21.3	21.8	-0.5	35.1	34.9	0.2
1994	21.6	22.4	-0.8	34.3	35.0	-0.7
1995	20.4	20.7	-0.3	33.5	33.1	0.4
1996	20.1	20.0	0.1	31.8	31.3	0.5
1997	17.4	20.0	-2.6	28.3	31.2	-2.9

The year 1997 was chosen as the end date because that is the last year for which data using both methods are available. At time of writing, SLID data had been collected but not yet released. However, unemployment rates and the number of people affected by unemployment based on the one-week reference period (from the LFS) are available for 1998 and 1999.

	1998	1999
	%	
Individual unemployment rate	8.3	7.6
Family unemployment rate	14.0	12.9
	'000	
Unemployed individuals	1,277	1,190
Persons affected by unemployment	2,300	2,174
Unattached individuals	208	198
In families	2,092	1,977
Unemployed persons	1,069	993
Other members	1,023	984

Family versus individual rates—monthly

Over the last 20 years, family unemployment rates have been consistently higher than individual unemployment rates (Chart A). This is not surprising, since a family consists of two or more people related by blood, marriage (including common-law) or adoption, and living in the same dwelling (see *Definitions*). This increases the family's exposure to the labour force and to the possibility of experiencing unemployment. It follows, then, that the greater the number of family members in the labour force the greater the family's chance of being affected by unemployment.⁴ For example, in 1997 the official unemployment rate for individuals was 9.1%. Among families the rate was more than one-and-a-half times as high, or 15.2%. In other words, while on

average almost one in 11 people in the labour force was unemployed in 1997, almost one in seven families with at least one member in the labour force was affected.

Family versus individual rates—annual

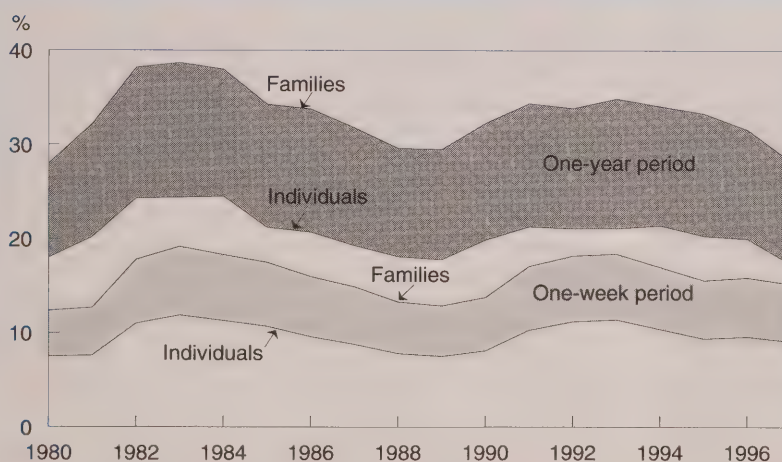
A one-year reference period also yields consistently higher family unemployment rates over the period, for similar reasons. Based on this reference period, the individual unemployment rate was 17.3% in 1997, compared with a family unemployment rate of 28.2%—again more than one-and-a-half times as high. This translates into almost one in 6 people in the labour force who were unemployed at one point during the year, and more than one in four families with at least one member in the labour force that were affected.

Reference period influences the rate

These different results reflect three effects. First, as the hypothetical example showed, when labour force experience is observed over an entire year, as opposed to 12 independently measured weekly reference periods, a larger number of persons are seen to experience unemployment.

Second, an annual average of 12 observations produces a smaller number of unemployed whenever the duration of unemployment is less than one year. For example, if the same 1,000 people are unemployed during the reference week of every month of a given year, a one-week reference period would count each person 12 times. The annual average would yield 1,000 unemployed persons ($1,000 \times 12 / 12 = 1,000$). An annual reference period would capture each person only once, but would estimate 1,000 people as having experienced unemployment at some point during the year. In this case, the two methods would yield the same results. However, under the monthly method, an unemployment spell lasting less than one year would lower the contribution of each unemployed person. Indeed, the shorter the spell the greater the gap between the two methods. If 1,000 people are unemployed during a reference week, and if each person is unemployed for only 6 months and a different group of 1,000 people is unemployed for the remaining 6 months, each person would be counted six times. Thus, an annual average would limit the annual contribution of each person to one-half (6 months out of 12). Therefore,

Chart A: Unemployment rates using a one-year reference are almost double those based on one-week periods.



Sources: Survey of Consumer Finances; Labour Force Survey

Definitions

An **individual** can be either unattached or a member of a family.

Unattached individuals refer to a subset of individuals who either live alone or are not related to anyone else in the household in which they live. The unemployment rate for unattached individuals illustrates another element of labour market behaviour. Their rate of unemployment tends to be higher—in 1997 it was 10.2%—than the official rate for all individuals (9.1%). This also holds if the one-year reference period is used, with a 17.3% unemployment rate for all individuals and 20.4% for unattached individuals. This is mainly because unattached individuals are more likely to be young (usually between 15 and 24), with less work experience and higher unemployment than older workers, who tend to have acquired skills that are more difficult to replace and who are less likely to be laid off.

Family refers to an *economic* family of two or more persons who inhabit the same dwelling and are related by blood, marriage (including common-law) or adoption. It does not include unrelated individuals living with them. More than one family may live in the same dwelling. The more restrictive **census family** (or nuclear family) groups parents and never-married children in the same dwelling into family units. The census family concept is useful for studying the effect of social programs on families of different income levels, since eligibility for benefits from a number of social programs (such as the Child Tax Benefit, Goods and Services Tax Credit, and Guaranteed Income Supplement of the Old Age Security program) is income-tested at the census family

level. The economic family concept is useful for analyzing economic interdependencies that may extend beyond parents and their never-married children to other family members sharing the same dwelling. For budget studies, which investigate patterns of family expenditure, the important criterion is whether persons living together pool their incomes for expenditure purposes.

The labour force consists of the civilian non-institutional population aged 15 and over who, during the survey reference period, were either employed (did any work for pay or profit or had a job but were absent from work) or unemployed.

Unemployment rate (individual) =

$$\frac{\text{Unemployed individuals 15 and over}}{\text{Individuals 15 and over in the labour force}}$$

Unemployment rate (family) =

$$\frac{\text{Families with at least one member unemployed}}{\text{Families with at least one member in the labour force}}$$

Unemployment rate (unattached individuals) =

$$\frac{\text{Unemployed unattached individuals 15 and over}}{\text{Unattached individuals in the labour force}}$$

Total number of people affected by unemployment =
unemployed individuals in families + other family members (all ages) + unemployed unattached individuals.

although this means that 2,000 people experienced unemployment at some point during the year (based on a one-year reference period), an annual average of the 12 weekly snapshots would yield only half as many (1,000 * 6/12 + 1,000 * 6/12 = 500 + 500 = 1,000). To the extent that the duration of unemployment for most people (71% in 1997) is less than 6 months, this distinction becomes particularly relevant.⁵

Finally, someone without work and looking for work only one week in the year, but employed for the remaining 51 weeks, would be counted under the one-year reference period as having experienced some unemployment. The monthly method, on the other hand, would count that person among the employed for that month if the week of unemployment did not fall in the reference period. This could affect the annual average of monthly estimates. Indeed, there are 40 such weeks (52 weeks of the year less the 12

reference weeks) in which such people could be unemployed yet not counted as such. They would be considered unemployed only with the one-year reference period.

In sum, the combined outcome of these three effects is to produce higher estimates of unemployment with a one-year reference period than with the traditional one-week reference period.

In general, annual rates tend to be almost double the monthly rates, whether individual- or family-based (Chart A). As noted earlier, the individual unemployment rate based on a one-year reference period was 17.3% in 1997. The rate based on one week was 9.1%. Similarly, the family rate established by a one-year reference period was 28.2%, again almost double the rate obtained using a one-week reference period (15.2%).

Unemployment affects more than just individuals

Since most Canadians belong to families, the number of unemployed people for any given period does not express the full socio-economic effect of unemployment. On average, 1.4 million individuals were unemployed in 1997 (based on a one-week reference period). Of this 1.4 million, 84% (or 1.2 million) belonged to families (Table 1). As total family income

is heavily dependent on the labour force status of its members, a job loss or failure to find a job (especially by the primary wage-earner) could affect the financial well-being of all family members. Including the 1.1 million family members (including children) of those who were unemployed, some 2.5 million people on average were affected either directly or indirectly by unemployment in 1997, almost double the number actually unemployed.⁶

For the reasons described earlier, use of a one-year reference period yields an even greater number. According to this method, almost 3 million individuals experienced unemployment at some point in 1997 (more than twice the average obtained with the one-week reference period) and almost 3 million family members were in turn affected (almost three times the number produced by the one-week reference period). These relative findings held true for other years as well.

Furthermore, depending on the reference period, this translates into as little as 8.4% (using the one-week reference period) or as much as 19.2% (using the one-year reference period) of the Canadian population as a whole who directly or indirectly felt the effects of unemployment in 1997. This compares with only 4.7% based on the official number of unemployed individuals.⁷

Unemployment sensitive to business cycle

Unemployment rates fluctuate in response to changes in the business cycle, increasing in unfavourable economic conditions and decreasing during periods of relative prosperity. As well, the gaps between the official unemployment rate and various measures described here tend to widen during recessionary periods (Chart B).

The *number* of people touched by unemployment is also affected by the business cycle. Those people coping with the effects of unemployment (that is, the unemployed and members of their families) peaked in 1983 and again in 1993, and reached lows in 1980 and 1989, regardless of reference period.

Provincial rankings vary slightly

In 1997, Newfoundland had by far the highest unemployment rate of all provinces (whether by one-week or one-year reference period), both for individuals (18.6% or 40.3%) and for families (28.6% or 58.2%).

Table 1: Number of persons affected by unemployment

	One-week*	One-year**
	'000	
1980		
Unemployed individuals†	890	2,345
Persons affected by unemployment	1,696	4,903
Unattached individuals	112	392
In families	1,584	4,511
Unemployed persons	778	1,953
Other members	806	2,558
1983		
Unemployed individuals†	1,496	3,356
Persons affected by unemployment	2,680	6,861
Unattached individuals	206	512
In families	2,474	6,350
Unemployed persons	1,290	2,845
Other members	1,185	3,505
1989		
Unemployed individuals†	1,060	2,769
Persons affected by unemployment	1,931	5,375
Unattached individuals	163	459
In families	1,768	4,915
Unemployed persons	897	2,310
Other members	871	2,605
1993		
Unemployed individuals†	1,647	3,375
Persons affected by unemployment	2,845	6,660
Unattached individuals	274	583
In families	2,571	6,077
Unemployed persons	1,373	2,792
Other members	1,198	3,285
1997		
Unemployed individuals†	1,379	2,884
Persons affected by unemployment	2,461	5,654
Unattached individuals	221	515
In families	2,241	5,139
Unemployed persons	1,158	2,369
Other members	1,083	2,770

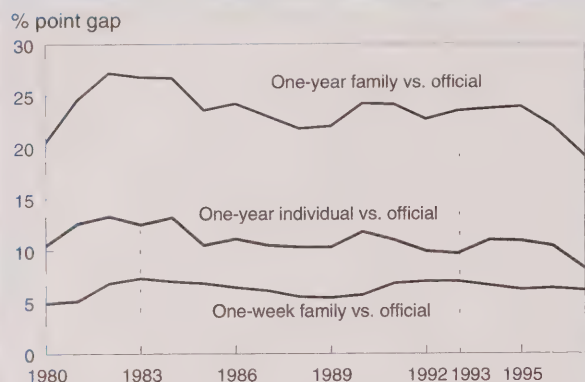
Sources: Labour Force Survey; Survey of Consumer Finances

* Average of 12 reference weeks.

** Annual reference period.

† Unemployed persons living alone or in families.

Chart B: Gaps between alternative rates and the official rate tend to widen during recessions.



Sources: Survey of Consumer Finances; Labour Force Survey

By contrast, Saskatchewan had the lowest unemployment except in the case of the one-week reference period for individuals (claimed by Alberta) (Table 2).

The remaining provinces displayed similar slight shifts in rank depending on unit of measurement and reference period. No province except Alberta changed its position by more than one.

Table 2: Ranking* of provincial unemployment rates, 1997

	Individual		Family	
	One-week**	One-year†	One-week**	One-year†
Newfoundland	10	10	10	10
Prince Edward Island	9	9	9	9
Nova Scotia	7	7	7	7
New Brunswick	8	8	8	8
Quebec	6	6	6	6
Ontario	4/5	4	5	4
Manitoba	3	2	3	2
Saskatchewan	2	1	1	1
Alberta	1	3	2	3
British Columbia	4/5	5	4	5

Sources: Labour Force Survey; Survey of Consumer Finances

* From low to high (1 to 10).

** Average of 12 reference weeks.

† Annual reference period.

These shifts in rank translated into slightly higher (or lower) proportions of people affected by unemployment in each province (Table 3). Both reference periods produced higher proportions in the east and lower ones in the west.

Table 3: Proportion of people affected by unemployment, by province, 1997

	One-week*	One-year**
	%	
Canada	8.4	19.2
Newfoundland	12.8	39.2
Prince Edward Island	13.5	33.9
Nova Scotia	9.7	26.1
New Brunswick	10.2	30.4
Quebec	9.3	21.6
Ontario	8.2	16.4
Manitoba	6.0	13.8
Saskatchewan	5.2	12.5
Alberta	6.1	15.4
British Columbia	7.8	19.3

Sources: Labour Force Survey; Survey of Consumer Finances

* Average of 12 reference weeks.

** Annual reference period.

Summary

The official unemployment rate has long been used as a key indicator of labour market conditions. It focuses on the individual as a unit of measurement and is based on data from a monthly survey. The use of different units of measurement (for example, the family) and different reference periods (for example, a year) affects the calculation and thus the unemployment rate. So a family, given its greater exposure to the labour force, will be more likely than an individual to be affected by unemployment and will therefore be associated with a higher unemployment rate. Moreover, labour force experience observed over an entire year rather than on 12 weekly occasions (one for each month of the year) reveals a greater incidence of unemployment. All these rates respond to changes in the business cycle, with family unemployment rates increasing more at the beginning of a recession than the official rate. Finally, the ranking of provincial

unemployment rates varies slightly according to the approach used, though no province except Alberta changed its relative position in this study by more than one level.

Perspectives

■ Notes

- 1 This refers to seasonally adjusted figures.
- 2 The subject of supplementary measures of unemployment has been covered in previous Statistics Canada publications (Statistics Canada, 1999b; Devereaux, 1992). See also Statistics Canada (1999a), available on CD-ROM.
- 3 Beginning with 1998, the SCF has been replaced by the Survey of Labour and Income Dynamics.
- 4 The probability of a family's having at least one person unemployed is not simply a function of the number of family members in the labour force. It is also a function of socio-demographic characteristics, particularly those associated with different probabilities of becoming unemployed, such as age. For example, if the family includes several people aged 15 to 24 (assuming that they are all in the labour force), the probability of its having at least one person unemployed would be higher than that of another family with the same number of persons in the labour force but whose ages are 25 and over. This is because the probability of being unemployed is higher among people aged 15 to 24.
- 5 For employment estimates, the effect of differences between the two reference periods can be ignored because most people (78% in 1997) who are employed at any point within the year are employed for the full year.

6 This is not surprising, given that the average economic family includes more than two people. This is partly offset by unattached individuals, who make no contribution to the larger estimate, as well as by the possibility that more than one person in the family may be unemployed.

7 These proportions were calculated using estimates of the total Canadian population on July 1, 1997.

■ References

- Devereaux, M.S. "Alternative measures of unemployment." *Perspectives on Labour and Income* (Statistics Canada, Catalogue no. 75-001-XPE) 4, no. 4 (Winter 1992): 35-43.
- Noreau, N. "The many faces of unemployment." *Perspectives on Labour and Income* (Statistics Canada, Catalogue no. 75-001-XPE) 8, no. 1 (Spring 1996): 35-42.
- Noreau, N., A. Hale and P. Giles. *Labour Force Classification in SLID and LFS*. Statistics Canada, Catalogue no. 75F0002MIE97010. Ottawa, 1997.
- Statistics Canada. *Labour Force Historical Review*. Catalogue no. 71F0004XCB. Ottawa, 1999a.
- . *Labour Force Update*. Catalogue no. 71-005-XPB. (Summer 1999b) 3, no. 3.
- . *Guide to the Labour Force Survey*. Catalogue no. 71-528-XPB. Ottawa, 1997.

Taxes internationally

Zhengxi Lin

Total tax revenues in Canada reached \$324.6 billion in 1997—36.8% of gross domestic product (GDP),¹ which was substantially higher than the 29.7% in the United States. Compared with other developed nations, however, Canada tended to fall in the middle, although its ranking in terms of various components varied considerably. This note compares taxation among the G-7 and other members of the Organisation for Economic Co-operation and Development (OECD) through a series of charts and one table.

Comparison of effective tax rates

Even under the common OECD classification, different bases are used to calculate tax liabilities for different components (see *OECD classification of taxes*). Furthermore, the tax liability for each component depends upon not only the tax base and the statutory (legislated) tax rate but also various exemptions, deductions, credits and surtaxes. These factors differ between countries as well as within countries over time.

Following common international practice, this article uses GDP as the base to compute effective tax rates. Many factors can affect the tax-to-GDP ratios: the extent to which countries provide social or economic assistance through tax expenditures or direct government spending, differences in the degree of tax avoidance and the size of the underground economy, as well as differences in GDP measurement (OECD, 1999).

Adapted from a forthcoming analytical report. Zhengxi Lin is with the Labour and Household Surveys Analysis Division. He can be reached at (613) 951-0830 or linzhen@statcan.ca.

OECD classification of taxes

Tax systems differ substantially from country to country and the OECD member states are no exception. While federal countries (for example, Canada, Germany and the United States) generally have three levels of government with authority to levy taxes (federal/central, state/provincial and local/municipal), unitary countries (for example, France, Italy and Japan) have two (federal/central and local/municipal). And different governments raise tax revenues through many different forms; some rely upon certain forms more heavily than others. Therefore, a meaningful international study requires a comparison at the same level using a common classification system and comparable data. This study uses the OECD tax classification system and its most recent data (1997).² It focuses on aggregate taxation at the national level, regardless of the levying authority (level of government).

Class of tax

- 1000 Taxes on income, profits and capital gains
 - 1100 Taxes on income, profits and capital gains of individuals
 - 1200 Corporate taxes on income, profits and capital gains
- 2000 Social security contributions
- 3000 Taxes on payroll and workforce³
- 4000 Taxes on property
 - 4100 Recurrent taxes on immovable property
 - 4200 Recurrent taxes on net wealth
 - 4300 Estate, inheritance and gift taxes
 - 4400 Taxes on financial and capital transactions
 - 4500 Other non-recurrent taxes on property
 - 4600 Other recurrent taxes on property
- 5000 Taxes on goods and services⁴
 - 5100 Taxes on production, sale, transfer, leasing and delivery of goods and rendering of services
 - 5200 Taxes on use of goods, or on permission to use goods or perform activities
- 6000 Other taxes

Table: Tax-to-GDP ratios in OECD countries, 1997

	Total taxes		Personal tax		Corporate tax		Payroll tax		Property tax		Goods and services tax	
	Rate	Rank*	Rate	Rank*	Rate	Rank*	Rate	Rank*	Rate	Rank*	Rate	Rank*
	%		%		%		%		%		%	
Australia	29.8	6	12.5	22	4.4	25	2.0	3	2.7	22	8.2	4
Austria	44.3	22	9.8	15	2.1	6	18.0	29	0.6	2	12.5	16
Belgium	46.0	25	14.3	24	3.4	17	14.6	22	1.3	10	12.3	14
Canada	36.8	15	14.0	23	3.8	19	5.7	9	3.7	27	9.0	5
Czech Republic	38.6	17	5.2	3	3.3	15	16.9	25	0.5	1	12.6	17
Denmark	49.5	28	25.9	28	2.6	9	1.9	2	1.7	13	16.3	29
Finland	46.5	26	15.5	25	3.8	19	11.7	16	1.1	7	14.4	23
France	45.1	24	6.3	7	2.6	9	19.4	28	2.4	19	12.6	17
Germany	37.2	16	8.9	13	1.5	2	15.5	24	1.0	6	10.3	9
Greece	33.7	9	4.5	2	2.1	6	10.9	15	1.3	10	13.8	22
Hungary	39.4	18	6.6	9	1.9	4	14.3	21	0.6	2	15.5	27
Iceland	32.2	7	10.6	17	0.9	1	2.8	6	2.6	20	15.3	26
Ireland	32.8	8	10.3	16	3.3	15	4.6	8	1.6	12	13.0	21
Italy	44.4	23	11.2	20	4.2	22	15.0	23	2.3	18	11.5	11
Japan	28.8	4	5.9	4	4.3	23	10.6	14	3.1	24	4.8	1
Korea	21.4	2	3.6	1	2.2	8	2.0	3	2.9	23	9.7	7
Luxembourg	46.5	26	9.5	14	8.6	28	11.8	17	3.6	26	12.6	17
Mexico	16.9	1	..	..	..	..	2.7	5	..	..	9.3	6
Netherlands	41.9	20	6.5	8	4.4	25	17.1	27	1.9	14	11.7	13
New Zealand	36.4	14	15.7	26	3.9	21	0.3	1	2.0	15	12.6	17
Norway	42.6	21	11.0	19	5.2	27	9.6	13	1.1	7	15.8	28
Poland	41.2	19	8.8	11	3.2	13	13.5	20	1.2	9	14.4	23
Portugal	34.2	12	6.1	6	3.7	18	8.9	12	0.8	4	14.4	23
Spain	33.7	9	7.4	10	2.6	9	11.8	17	2.0	15	9.7	7
Sweden	51.9	29	18.2	27	3.2	14	16.9	25	2.0	15	11.6	12
Switzerland	33.8	11	10.6	17	2.0	5	12.5	19	2.6	20	6.2	3
Turkey	27.9	3	6.0	5	1.6	3	4.0	7	0.8	4	10.3	9
United Kingdom	35.4	13	8.8	11	4.3	23	6.1	10	3.8	28	12.4	15
United States	29.7	5	11.6	21	2.8	12	7.2	11	3.2	25	4.9	2
Unweighted average												
G-7**	36.8		9.5		3.4		11.4		2.8		9.4	
OECD total	37.2		10.2		3.3		10.0		1.9		11.6	
OECD Europe	39.9		10.1		3.2		11.7		1.7		12.7	
European Union†	41.5		10.9		3.5		12.2		1.8		12.6	

Source: Organisation for Economic Co-operation and Development

Note: Components do not add to total because some are not shown here.

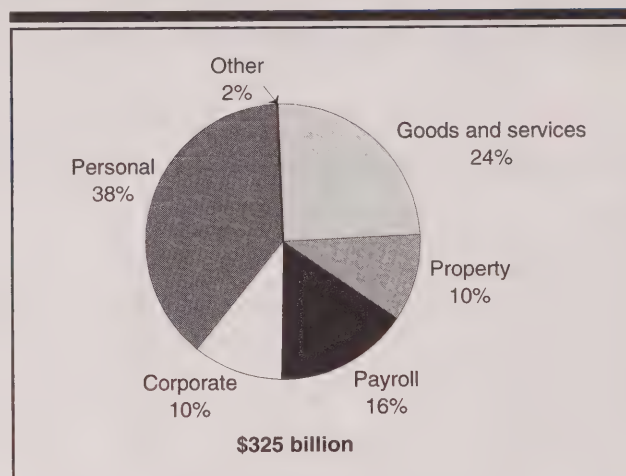
* From low to high (1 to 28 or 29).

** The G-7 nations are Canada, France, Germany, Italy, Japan, the United Kingdom and the United States.

† The European Union comprises Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and the United Kingdom.

Canada's tax composition

Taxes on personal income, profits and capital gains (personal taxes) constituted the largest component (38%) of Canada's overall \$325 billion in 1997 taxation. Taxes on goods and services were next (24%), followed by payroll taxes (16%). Taxes on corporate income, profits and capital gains (corporate taxes) and those on property each represented about 10% of total tax revenues.



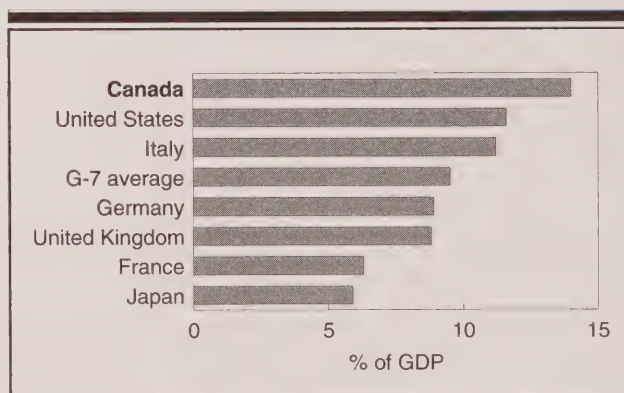
Canada's total taxation in the middle of the G-7 pack



In 1997, Canada's overall tax rate matched the G-7 average, higher than that of Japan, the United States or the United Kingdom, but lower than that of France, Italy or Germany. When the comparison is extended to the entire OECD membership, Canada's overall tax rate was lower than average, as it was when compared with OECD European members and the 15 European Union countries. It ranked 14th among all 29 OECD countries.

Canada's personal taxation one of the highest

Personal tax revenues in Canada (\$123.4 billion in 1997) amounted to 14% of GDP. This ratio was the highest among the world's richest nations—more than double those of Japan and France and over 20% higher than that of the United States. This ratio was also one of the highest among the world's leading economies. It was the sixth highest among the 28 OECD countries for which data are available.⁵

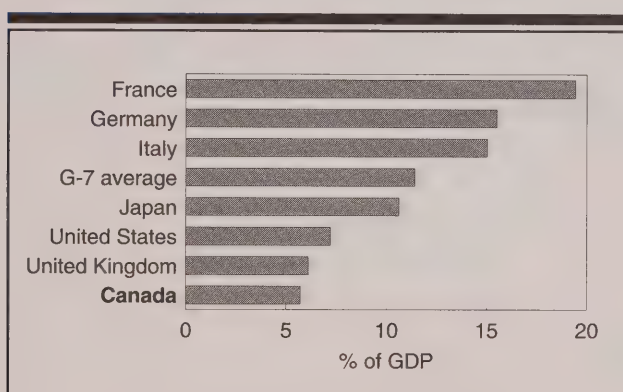


Canada's corporate taxation on the middle-to-high side

Canada's corporate tax revenues reached \$33.6 billion in 1997, amounting to 3.8% of GDP. This ratio was in the middle of the G-7 pack—over two-and-a-half times that of Germany. It tied with that of Finland for the ninth highest place among the 28 OECD countries for which data are available.



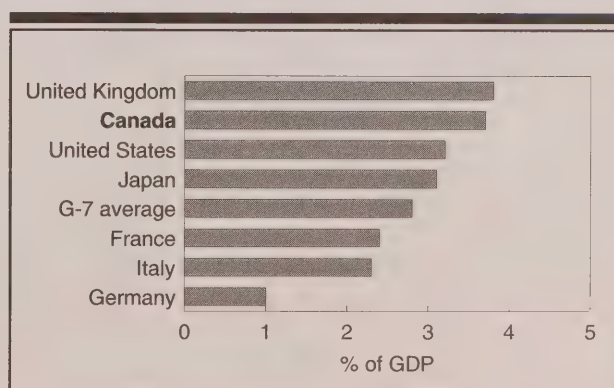
Canada's payroll taxation one of the lowest



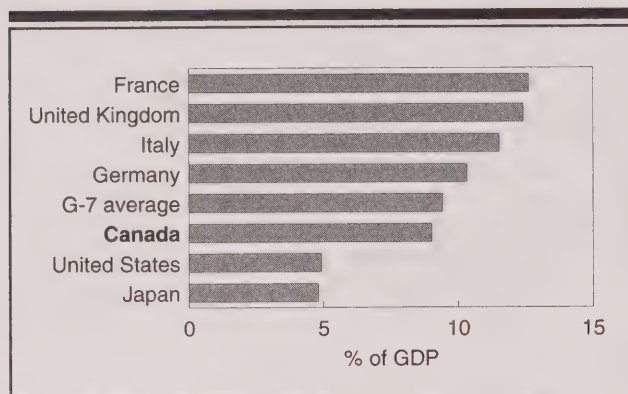
Payroll tax revenues (employer and employee contributions combined) in Canada totalled \$50.4 billion in 1997, some 5.7% of GDP. This ratio was the lowest among the G-7 countries, equivalent to half their average. When the comparison is broadened to all OECD members, Canada's payroll tax ratio was still one of the lowest.

Canada's property taxation one of the highest

Property tax revenues in Canada amounted to 3.7% of GDP, the second highest among the G-7, just surpassed by that of the United Kingdom. This ratio was also the second highest among the 28 OECD member countries for which data are available.



Canada's goods and services taxation one of the lowest



The goods and services tax ratio in Canada was nearly double that of Japan or the United States, but lower than those of the other four G-7 countries. Among OECD countries, Canada's tax ratio ranked fifth lowest.

Perspectives

■ Notes

- 1 GDP is measured in market prices throughout the article.
- 2 Only certain member states have provided estimates for 1998. Thus the most recent year for which complete data are available is 1997.
- 3 Given that some countries have only class 2000 while others have both classes 2000 and 3000, the two are combined here ("payroll taxes") to improve comparability. The bulk of payroll-type taxes are placed in class 2000.

- 4 Unallocable items within each class and other taxes (class 6000) are excluded in the comparison here.
- 5 Data for Mexico are not available.

■ Reference

Organisation for Economic Co-operation and Development. *Revenue Statistics, 1965-1998*. Paris: OECD, 1999.

Payroll taxes—recent trends

Zhengxi Lin

Canada's payroll taxes have historically been among the lowest in the industrialized world. This is true whether they are expressed as a proportion of gross domestic product (GDP) or of total tax revenues. Despite one of the highest growth rates in recent years, payroll taxes remain much lower in Canada than in many countries.

Canada currently has nine payroll taxes: two nationwide administered by the federal government, one nationwide by all provincial/territorial governments, and six by five provincial/territorial governments. The three national payroll taxes are the Employment Insurance premiums levied on employees and employers; the Canada and Quebec Pension Plan contributions required of employees, employers and the self-employed; and the workers' compensation premiums levied on employers only. The six provincial/territorial payroll taxes are Quebec's health services fund contributions (levied mostly on employers); employer contributions to vocational training also charged by Quebec; Manitoba's health and postsecondary education tax (imposed exclusively on employers); Ontario's employer health tax; Newfoundland's health and postsecondary education tax (levied on employers); and the Northwest Territories' payroll tax (levied on employees).

This article complements a review of the structure and statutory parameters of the Canadian payroll tax system (Lin, 2000). It reports trends for the country as a whole and for each province from 1980 to 1997 (see *Data sources and limitations*). It also compares Canadian payroll taxes with those of other developed countries.

Zhengxi Lin is with the Labour and Household Surveys Analysis Division. He can be reached at (613) 951-0830 or linzhen@statcan.ca.

Average payroll taxes highest in Quebec

Total payroll taxes collected from employees and employers in the 10 provinces amounted to over \$48 billion in 1997, averaging \$4,200 per wage and salary worker (Chart A). This represents an increase of approximately 30% from 1990 (at \$3,200) and over 150% from 1980 (at \$1,700).⁴

These taxes varied widely in level and growth across the provinces. Quebec had the highest level, with average total payroll taxes amounting to over \$5,000 per employee—nearly 20% higher than the 1997 national average. Businesses and their employees in Ontario paid the second highest average at \$4,400 per employee—about 3% higher than the national average. The lowest average taxes were in Prince Edward Island, New Brunswick and Saskatchewan, equivalent to about three-quarters of the national average.

Between 1980 and 1997, Newfoundland, Ontario and Manitoba experienced relatively high increases in average payroll taxes (ranging from 182% to 202%), as all three introduced their levies for health care and/or postsecondary education after 1980. Lower increases took place in Alberta and British Columbia (104% and 115%, respectively). The growth pattern differed substantially with each decade. During the 1980s, payroll taxes in Ontario and Manitoba increased 136% and 119%, compared with around 50% to 60% in British Columbia and Saskatchewan. In the 1990s, Newfoundland and British Columbia saw higher growth than Ontario and Alberta (53% and 46% versus slightly below 26%). Elsewhere, growth in payroll taxes was below average in the 1980s but above average in the 1990s.

Data sources and limitations

The supplementary labour income (SLI) database, compiled and maintained by the Income and Expenditure Accounts Division, provides data on employer-paid Employment Insurance (EI) premiums and Canada and Quebec Pension Plan (C/QPP) contributions. From these sources, EI and C/QPP payroll taxes are calculated according to fixed ratios;¹ the SLI also provides data on workers' compensation (WC) premiums. The provincial accounts of Quebec, Manitoba, Ontario and Newfoundland provide data on five of the six provincial payroll taxes.

Payroll taxes are only those collected from employees and employers in the 10 provinces; those raised in the 3 territories or outside the country are excluded. The main advantage of the SLI dataset is its consistency over a

long period. The source has a number of limitations, however. First, it is possible that employee contributions to EI and C/QPP exceed the annual maximums in cases of multiple jobholding; these overcontributions are refunded through the personal income tax system. Because total taxes derived here do not make adjustments for employee overcontributions, the source overestimates total taxes. Although the degree of these overcontributions is unknown, it is not believed to be significant.²

Second, the EI system has allowed premium reductions to employers (for example, reductions for hiring young workers and reductions to small businesses at various times) but not to their employees. Deriving employee premiums based on employer taxes thus underestimates total employee taxes, though probably not substantially.

Third, since employee C/QPP contributions are derived from employer taxes, these data underestimate total contributions because they exclude those of self-employed workers.³ (The latter workers contribute to the C/QPP at the combined employer-employee rate based on their net earnings.) This does not affect the analysis here because the focus is on payroll taxes of *employees* (self-employed individuals do not pay EI or WC premiums either).

The following secondary data are formed from primary data plus relevant figures from Statistics Canada's CANSIM database: average payroll taxes per employee, payroll taxes as a proportion of gross domestic product, payroll taxes as a share of total federal and provincial government revenues, and effective payroll tax rates (payroll taxes as a proportion of total wages and salaries).

Payroll tax share of GDP stable after 1992

Total payroll taxes paid by Canadian employees and employers stabilized at 5.7% of GDP (at

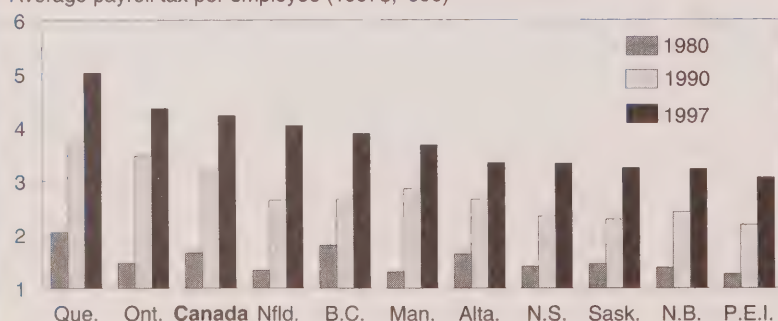
market prices) after 1992, up from 4.9% in 1990 and 2.8% in 1980 (Chart B). Provincial levels and growth varied, however. Not surprisingly, the highest proportions were in the four provinces

with their own levies. In 1997, revenues raised through payroll taxes amounted to 7.4% of GDP in Quebec, 6.1% in Newfoundland, 5.6% in Ontario, and 5.5% in Manitoba. Figures were lower in Alberta and Saskatchewan (3.8% and 4.0%).

From 1980 to 1997, payroll taxes grew most in Newfoundland, Ontario and Manitoba (ranging from 113% to 122%); in contrast, Nova Scotia and New Brunswick experienced less growth (about 50%). This two-decade trend differs significantly from that of the 1990s. While taxes in Newfoundland still expanded substantially, the largest increases were in Nova Scotia, Quebec, Saskatchewan and British Columbia; Ontario and Alberta had the least growth in taxes.

Chart A: Quebec has consistently led the nation in payroll taxes.

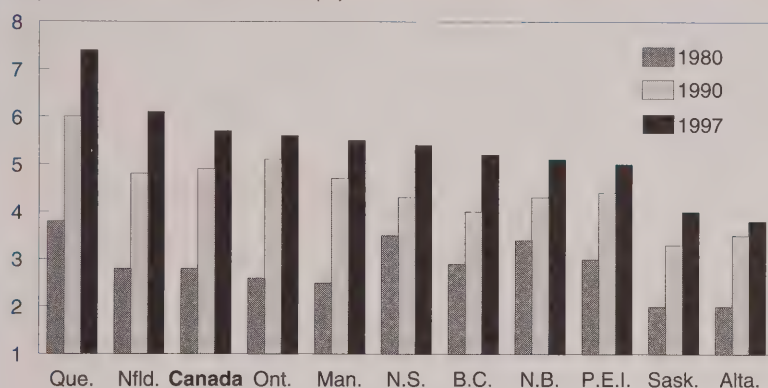
Average payroll tax per employee (1997\$, '000)



Sources: Labour Force Survey; Income and Expenditure Accounts Division; provincial accounts of Quebec, Manitoba, Ontario and Newfoundland

Chart B: Provinces with their own levies have had the highest tax-to-GDP ratios.

Payroll taxes as a share of GDP (%)



Sources: Income and Expenditure Accounts Division; provincial accounts of Quebec, Manitoba, Ontario and Newfoundland

Payroll taxes growing in importance

For the country as a whole, revenues generated through payroll taxes accounted for 14% of all federal and provincial government

revenues in 1996, up 13% from 1990 (12.4%) and by over 71% from 1980 (8.2%) (Chart C). Payroll taxes represent a more important source of government funds in some provinces than in others. In 1996, payroll tax rev-

enues amounted to 16.1% of all federal and provincial government monies raised in Quebec and 15.4% in Ontario, compared with only 9.3% in Saskatchewan and 9.6% in New Brunswick. In the remaining provinces, the share of all federal and provincial government revenues accounted for by payroll taxes ranged from 10% to 12%.

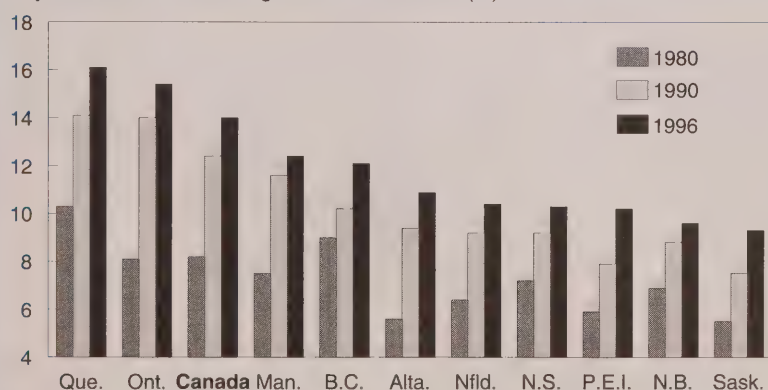
Substantial differences in growth also exist across provinces. In the 1980s, payroll taxes raised in Ontario, Alberta and Manitoba expanded as a source of government revenues (55% to 73%). In the 1990s, Prince Edward Island, Saskatchewan and British Columbia experienced large payroll tax expansion (28%, 24% and 18%, respectively).

Effective payroll tax rate less than statutory rate

Employment Insurance (EI) and Canada and Quebec Pension Plan (C/QPP) taxes are based on, but not proportional to, employee earnings. Prior to 1997, EI had a minimum earnings coverage requirement (tax floor) and a ceiling. The floor was removed in 1997, although the ceiling is still in force. The C/QPP has in place both a floor and a ceiling. For both federal taxes, the statutory rates apply only to the eligible range; earnings below the floor or above the ceiling are exempt. From the point of view of employers, amounts of EI and C/QPP contributions can be affected not only by individual employees' earnings but also by the overall earnings mix. So tax liability can vary significantly across different businesses with similar payrolls.

Chart C: All provinces have increased their revenue from payroll taxes.

Payroll taxes as a share of government revenues (%)



Sources: Income and Expenditure Accounts Division; provincial accounts of Quebec, Manitoba, Ontario and Newfoundland

The workers' compensation (WC) tax is based on total payrolls of the employer, but the applicable tax rate (for the same level of payroll) can differ from one administration to another and from one industry to another, because of experience rating. Tax liability, therefore, depends upon not only the level of payrolls but also a business's past use of the system, its location and the industrial mix of its activities.

Quebec's Health Services Fund was a flat-rated levy on the entire payroll without exemptions until 1999, when a series of rate reductions was introduced to provide tax relief to small and medium-sized businesses (total payrolls under \$5 million). The province's Employer Contribution to Vocational Training levy, also flat-rated, provides some relief to small and medium-sized businesses: employers with total payrolls below the threshold are exempted from the tax.

Since 1984, Manitoba's Health and Post Secondary Education Tax Levy has been "notch-rated," which lightens the tax burden of small and medium-sized employers. Payrolls under the exemption are not taxed; payrolls under the "notch maximum" are assessed for only the "notch range" (the portion of payrolls in excess of the exemption) at the "notch rate." Only when payrolls exceed the "notch maximum" is the full payroll assessed at the full rate.

Ontario's health tax used to cover the entire payroll with a series of graduated tax rates: employers with different levels of payrolls were assessed at different contribution rates. Since 1999, the health tax has been a fully flat-rated system with an exemption.

Newfoundland's Health and Post-Secondary Education Tax not only allows an exemption but also assesses employers in the renewable resources sector (fishing, farming and forestry) at a reduced rate.

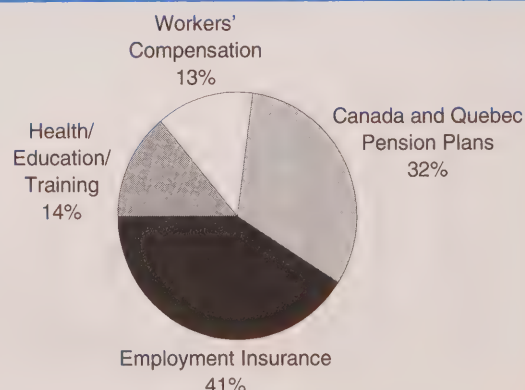
Owing to all these differences, along with a varied number of applicable taxes among provinces (Quebec has five; Manitoba, Ontario and Newfoundland, four each; the rest, three each), legislated tax rates are not comparable over time or across provinces. To overcome the difficulty associated with these differences, this analysis calculates and compares effective payroll tax rates—total payroll tax revenues collected in each jurisdiction expressed as a proportion of total wages and salaries. Thus, the same base is used for the calculation of the tax rate across all components, in all provinces, and for all years.

For the country as a whole, the total effective payroll tax rate amounted to \$12.23 per \$100 of wages and salaries in 1997. This was up by 25% from \$9.82 in 1990 and by nearly 120% from \$5.61 in 1980. This growth trend reflects the introduction of four of the five provincial health/education/training (H/E/T) taxes in the 1980s and 1990s, and increases in existing taxes. Both the level and growth of effective payroll tax rates vary considerably across components and provinces.

EI and C/QPP dominant components

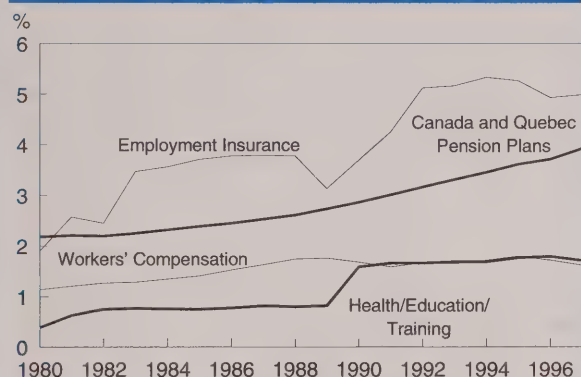
The EI tax was the largest component for most of the period studied. Total premiums collected from employees and employers amounted to \$19.7 billion in 1997, accounting for 41% of total payroll tax revenues raised in the country that year (Chart D). From 1980 to 1997, the effective EI tax rate expanded by over 160%, from \$1.90 per \$100 of wages and salaries to \$4.98 (Chart E). The rate experienced two periods of rapid growth: following the 1981-82 recession and during the 1990-92 recession.⁵ It also edged up slightly during the 1980s recovery and expansion. The biggest decrease occurred in 1989, when the effective tax rate came down by \$0.65 per \$100 of wages and salaries. (The statutory employee premium rate dropped from \$2.35 per \$100 of insurable earnings in 1989 to \$1.95 in 1990.) The rate decreased slightly in 1995 and 1996, but edged up again in 1997 despite the drop in the statutory premium

Chart D: The two federal taxes accounted for more than 70% of payroll taxes in 1997.



Sources: *Income and Expenditure Accounts Division; provincial accounts of Quebec, Manitoba, Ontario and Newfoundland*

Chart E: For most of the past two decades, EI has had the highest effective tax rate.



Sources: Income and Expenditure Accounts Division; provincial accounts of Quebec, Manitoba, Ontario and Newfoundland

rate—probably as a result of the abolishment of the minimum earnings coverage requirement (tax floor) that year.

Except for 1980, the C/QPP tax was the second largest component throughout the period, accounting for 32% of total payroll tax revenues in 1997. The effective C/QPP tax rate rose from \$2.18 per \$100 of wages and salaries in 1980, to \$2.39 in 1985 and \$2.86 in 1990, further to \$3.61 in 1995 and \$3.92 in 1997.

The WC tax was the third largest component until 1990, when the provincial H/E/T tax jumped to virtually the same rate. In terms of growth, the effective WC tax rate rose slowly (usually detectable only in the second decimal point) until 1989, and then fluctuated between 1.6% and 1.7%.

The effective provincial H/E/T tax rate amounted to \$1.71 per \$100 of wages and salaries in 1997. The largest hike happened in 1990, when Ontario and Newfoundland enacted their levies: the rate nearly doubled between 1989 and 1990, from 0.82% to 1.59%. Another big increase took place in 1981, when Quebec doubled its contribution rate (the only provincial tax at the time): the overall effective provincial H/E/T tax rate jumped from 0.39% in 1980 to 0.63% in 1981. It rose further to 0.75% in 1982, when Manitoba introduced the tax. The rate levelled off for the rest of the period (around 0.8% in the 1980s and 1.7% in the 1990s).

Provincial rates vary substantially

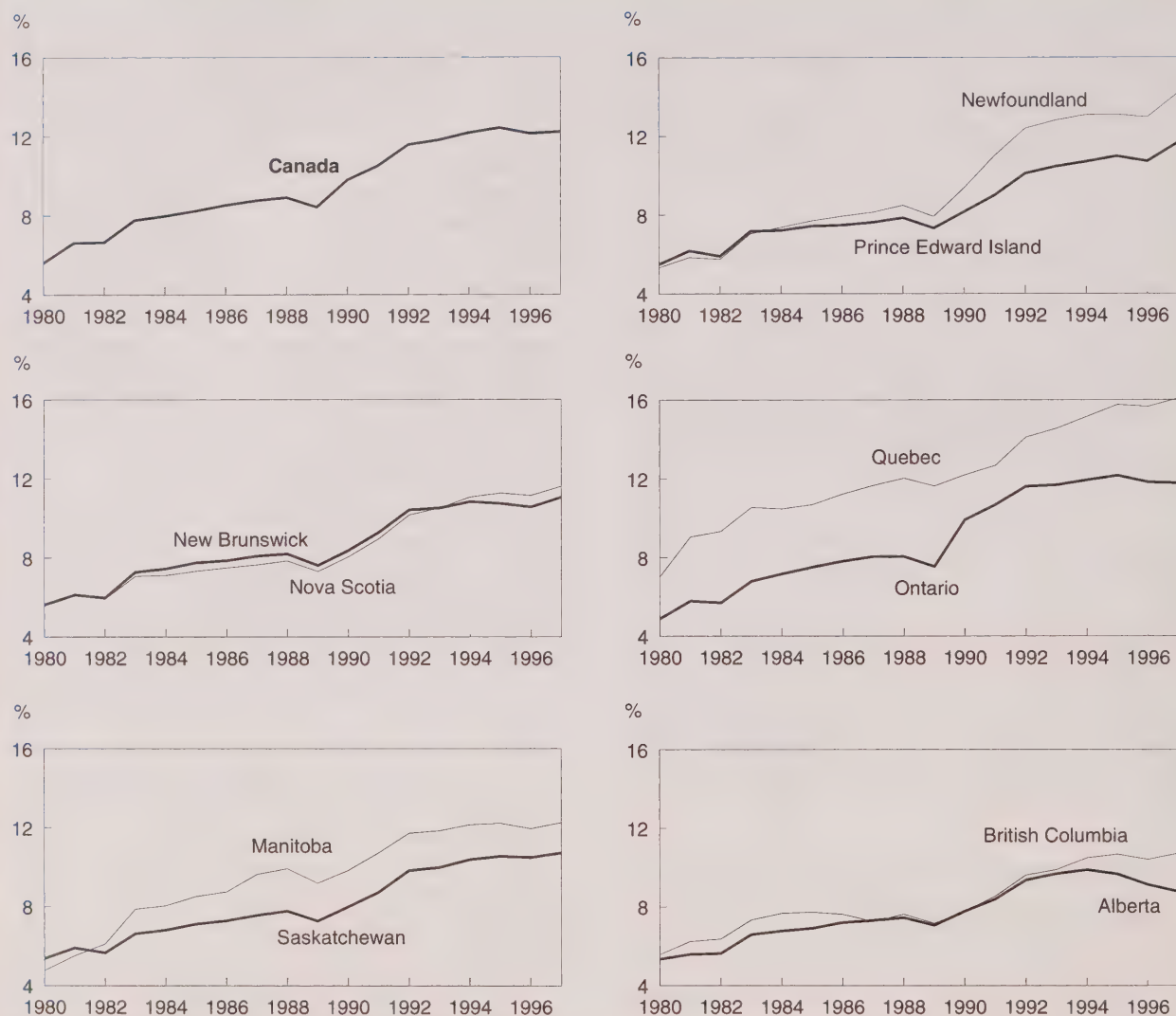
Quebec had the highest effective payroll tax rate in the country throughout the 1980s and 1990s. For every \$100 of wages and salaries, employees and employers in Quebec paid \$16.08 in 1997 payroll taxes to the federal and provincial governments combined to help fund EI, QPP, WC, health care, and training (Chart F). The second highest tax rate was observed in Newfoundland, at \$14.17 per \$100 of wages and salaries, followed by Manitoba (\$12.25) and Ontario (\$11.78). This is not surprising, since these are the four provinces with provincial taxes. Quebec has two, while the other three have one each. Alberta had the lowest effective tax rate at \$8.78 per \$100 of wages and salaries, equivalent to a little over 70% of the national rate or just over half of the rate in Quebec. Employees and employers in British Columbia and Saskatchewan also contributed at lower rates (around \$10.70 for every \$100 of wages and salaries).

In terms of growth, Newfoundland and Manitoba led the country with rates rising by around 160% between 1980 and 1997, followed by Quebec and Ontario (140% and 130%). Alberta experienced the lowest growth (64%). For the remaining five provinces, effective payroll tax growth rates ranged from 92% in British Columbia to 113% in Prince Edward Island.

Tax rates and roles have changed

For the country as a whole, the total effective payroll tax rate more than doubled between 1980 and 1997 (rising from \$5.61 per \$100 of wages and salaries to \$12.23). Of this growth, almost half was due to rising EI premiums; one-quarter to increasing C/QPP contributions; one-fifth to increases in established or new provincial payroll taxes for health care, postsecondary education or training; and the remainder to increasing WC premiums (Table 1).

EI premiums were responsible for 42% of the rate hike in the 1980s and 54% in the 1990s. The role of rising C/QPP contributions was relatively small in the 1980s (16%) but considerable in the 1990s (44%). On the other hand, the effects of provincial taxes were substantial in the 1980s (29%) but inconsequential in the 1990s (5%). WC premiums dropped slightly in the 1990s but accounted for 13% of the overall rate increase in the 1980s.

Chart F: Only Alberta had declines in its payroll tax rate between 1995 and 1997.

Sources: Income and Expenditure Accounts Division; provincial accounts of Quebec, Manitoba, Ontario and Newfoundland

The role of each component in the growth of total effective payroll tax rates varies appreciably from one province to another. For the four provinces with H/E/T taxes, the share of the total rate increase attributable to rising EI premiums ranged from 35% to 44% in the 1980s; and from 41% to 65% in the 1990s. For Quebec, increases in Health Services Fund contributions and/or the introduction of the training levy contributed the most to its total rate hike in the 1980s (37%) and were the third largest source in the

1990s (24%). For Ontario and Manitoba, the contribution of provincial payroll taxes was similar to that of EI premiums in the 1980s (around 34%). In the 1990s, both provinces' effective provincial tax rates dropped slightly. For Newfoundland, the enactment of its Health and Post-Secondary Education Tax accounted for 13% of its total rate increase between 1980 and 1990, and 20% in the 1990s. The rising C/QPP contributions were responsible for around 15% in the 1980s in all four provinces, but around

Table 1: Change in effective payroll tax rates and contribution of components, 1980 to 1997

	Canada	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.
1980 to 1997											
%-point rate change	6.6	8.8	6.2	5.9	5.4	9.1	6.9	7.5	5.4	3.4	5.1
% contribution											
EI	46.5	42.1	56.8	57.2	62.1	38.7	42.8	45.0	58.7	70.6	60.5
C/QPP	26.3	24.3	33.7	31.4	33.9	22.8	24.3	25.2	31.5	34.2	35.1
WC	7.3	16.7	9.5	11.4	3.9	7.2	9.0	8.5	9.8	-4.8	4.4
H/E/T	20.0	16.9	...	...	...	31.3	23.9	21.2	...	...	...
1980 to 1990											
%-point rate change	4.2	4.0	2.7	2.4	2.7	5.2	5.0	5.1	2.6	2.4	2.2
% contribution											
EI	42.4	44.0	68.1	72.8	63.9	36.8	34.5	38.4	72.0	70.0	80.8
C/QPP	16.2	14.5	23.3	22.8	20.3	14.9	13.7	14.8	25.6	21.5	31.3
WC	13.0	28.6	8.6	4.4	15.7	11.4	17.8	14.0	2.4	8.5	-12.1
H/E/T	28.5	12.9	...	...	...	37.0	34.0	32.9	...	...	...
1990 to 1997											
%-point rate change	2.4	4.8	3.5	3.6	2.7	3.9	1.9	2.4	2.7	1.0	2.9
% contribution											
EI	53.6	40.5	48.2	46.8	60.3	41.2	65.3	59.0	46.0	72.0	45.2
C/QPP	43.9	32.5	41.7	37.1	47.9	33.3	52.7	47.3	37.1	65.2	37.9
WC	-2.7	6.8	10.2	16.1	-8.2	1.7	-14.8	-2.9	17.0	-37.2	16.9
H/E/T	5.2	20.2	...	...	...	23.8	-3.2	-3.4	...	...	...

Sources: Income and Expenditure Accounts Division; provincial accounts of Quebec, Manitoba, Ontario and Newfoundland

33% for Newfoundland and Quebec, 47% for Manitoba and 53% for Ontario in the 1990s. The role of WC premiums was generally minor in the 1980s and often a non-issue in the 1990s.

For the six provinces without provincial taxes (other than WC), the contribution of growing EI premiums ranged from 64% to 81% in the 1980s, and from 45% to 72% in the 1990s. The share of rising C/PP contributions was 20% to 31% in the 1980s, increasing to the 37%-to-48% range in the 1990s; in particular, it reached 65% in Alberta. The effects of WC premiums were again relatively insignificant in the 1980s and often non-existent in the 1990s: the effective WC tax rate dropped a seventh in Ontario (from 1.83% in 1990 to 1.55% in 1997) and more than a quarter in Alberta (from 1.32% to 0.95%).

International perspective

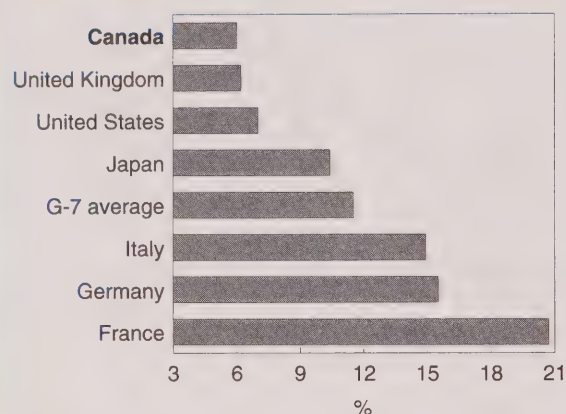
Governments raise tax revenues through many different forms,⁶ and some rely on certain ones more than others. Payroll tax revenues expressed as a proportion of GDP can give an indication of a country's payroll tax burden; the share of total tax revenues

accounted for by payroll taxes reveals its degree of reliance on payroll taxes (relative to other forms of taxation). By both measures, how do Canadian payroll taxes compare with those of other countries? While extensive comparisons are found in Kesselman (1997), this article updates the use of payroll taxation among member countries of the Organisation for Economic Co-operation and Development (OECD) to 1996, the most recent year for which comparable data are available.

Total payroll tax revenues⁷ in Canada amounted to 6.0% of GDP in 1996 (Chart G)—slightly lower than the rate in the United Kingdom, 14% lower than in the United States, and 42% lower than in Japan. The rate was equivalent to about 40% of that in Italy and Germany and 29% of that in France (OECD, 1998).

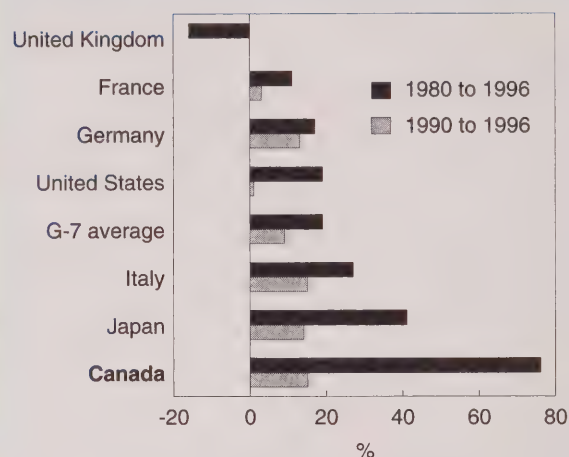
When the comparison is extended to all 29 OECD member states, Canada's payroll tax burden also stands out as one of the lowest. It was about 60% of the OECD average (10.1% of GDP) in 1996 and ranked the ninth lowest, higher only than those of New Zealand, Denmark, Australia, Korea, Mexico, Iceland, Turkey and Ireland (Table 2).

Chart G: Among the G-7 countries, Canada recorded the lowest payroll taxes as a percentage of GDP in 1996



Source: Organisation for Economic Co-operation and Development

Chart H: ...even though it had recorded the highest growth in the ratio since 1980.



Source: Organisation for Economic Co-operation and Development

However, growth patterns of the tax burden tell a different story. As a proportion of GDP, Canada's payroll taxes expanded by 77% between 1980 and 1996 (Chart H; Table 2). That was four times the average growth of 19% experienced by the G-7 member countries and nearly four times the average 20% growth experienced by the 25 OECD member nations for which such taxes have been applicable and data available since 1980.⁸ In fact, Canada's growth rate was the third highest among these 25 countries, being surpassed only by those of Korea and Denmark. Growth since 1990 shows a similar picture. Canada's expansion of its payroll tax-to-GDP ratio was the most marked among the G-7 members and the fifth highest among 26 OECD members, trailing only that of Finland, Switzerland, Iceland and Korea.

The contribution of payroll taxes to Canada's total taxation is one of the lowest among the world's leading industrialized countries. Total payroll tax revenues in Canada accounted for 16.3% of total taxation in 1996 (Table 3). That share was the lowest among G-7 countries and amounted to only slightly over half the average (30.7% of total taxation). For example, the

United States collected nearly one-quarter of its total tax revenues through payroll taxes. France had the highest degree of reliance on payroll taxes (45.4% of total tax revenues). Canada's share was the ninth lowest among OECD nations and equivalent to under two-thirds the average (25.8% of total taxation).

As a proportion of total taxation, Canada's payroll taxes expanded by 55% between 1980 and 1996. That growth was by far the highest among the G-7 countries—over seven times the average growth of 7.4%. The importance of payroll taxes as a source of tax revenues declined in the United Kingdom (17%) and Italy (11%) during this period. Among 25 OECD member countries, Canada showed the third highest growth in the ratio, lower only than that of Denmark and Korea. After 1990, Canada's reliance on payroll taxes grew by 14%—the second highest growth among the G-7—equivalent to 54% of Japan's (at 26%). Among the 26 comparable OECD countries, Canada's growth in the ratio ranked sixth highest—surpassed by that of Switzerland, Finland, Japan, Iceland and Korea. ("Taxes internationally" in this issue shows Canada's relative standing for other taxes.)

Table 2: Payroll tax* share of GDP in OECD countries

	1996 rank**	Proportion of GDP					% change		
		1980	1985	1990	1995	1996	1980-1996	1980-1990	1990-1996
		%					%		
New Zealand	1	...	0.2	0.7	0.4	0.3	...	...	-57.1
Denmark	2	0.8	2.3	1.8	1.8	1.8	125.0	125.0	-
Australia	3	1.4	1.4	1.9	2.1	2.1	50.0	35.7	10.5
Korea	4	0.3	0.4	1.1	1.9	2.2	633.3	266.7	100.0
Mexico	5	2.5	2.0	2.5	2.9	2.5	-	-	-
Iceland	6	1.7	1.7	2.1	2.5	2.8	64.7	23.5	33.3
Turkey	7	2.5	2.2	3.9	2.7	4.0	60.0	56.0	2.6
Ireland	8	4.8	6.3	5.7	5.3	4.9	2.1	18.8	-14.0
Canada	9	3.4	4.5	5.2	5.9	6.0	76.5	52.9	15.4
United Kingdom	10	7.4	6.7	6.2	6.3	6.2	-16.2	-16.2	-
United States	11	5.9	6.6	6.9	7.0	7.0	18.6	16.9	1.4
Portugal	12	8.1	7.9	8.4	9.4	9.0	11.1	3.7	7.1
Norway	13	9.0	9.0	11.0	9.7	9.6	6.7	22.2	-12.7
OECD average†		8.4	8.7	8.9	10.1	10.1	19.9	6.2	12.9
Japan	14	7.4	8.4	9.1	10.4	10.4	40.5	23.0	14.3
G-7 average		9.7	10.4	10.6	11.2	11.5	19.2	9.6	8.8
Luxembourg	15	12.5	12.6	11.8	11.8	11.9	-4.8	-5.6	0.8
Spain	16	11.6	11.8	12.1	12.3	12.1	4.3	4.3	-
Finland	17	7.3	7.3	9.9	12.7	12.4	69.9	35.6	25.3
Greece	18	10.2	13.0	11.5	12.9	12.7	24.5	12.7	10.4
Switzerland	19	9.0	9.9	10.0	12.4	13.0	44.4	11.1	30.0
Poland	20	...	...	...	13.3	13.4	...	...	...
Hungary	21	...	...	...	15.6	13.6	...	...	...
Belgium	22	13.3	15.1	14.8	15.2	14.9	12.0	11.3	0.7
Italy	23	11.7	12.2	13.0	13.2	14.9	27.4	11.1	14.6
Germany	24	13.2	13.9	13.7	15.5	15.5	17.4	3.8	13.1
Sweden	25	15.4	14.4	16.5	15.5	16.8	9.1	7.1	1.8
Czech Republic	26	...	...	...	16.9	17.0	...	...	...
Netherlands	27	17.2	19.5	16.7	18.3	17.1	-0.6	-2.9	2.4
Austria	28	15.3	15.9	16.0	18.1	18.1	18.3	4.6	13.1
France	29	18.7	20.2	20.1	20.4	20.7	10.7	7.5	3.0

Source: Organisation for Economic Co-operation and Development

* Sum of social security contributions and taxes on payrolls and workforce.

** From low to high (1 to 29).

† Excluding countries for which either the taxes are not applicable or the data are not available.

Summary

At present, a total of nine payroll taxes are administered in Canada: two by the federal government, one by all provincial/territorial governments, and six by five provincial/territorial governments.

Despite rapid growth, Canadian payroll taxes remain among the lowest in the world's major developed economies. According to data compiled by the OECD, total payroll tax revenues in Canada

amounted to around 6% of GDP—14% lower than that of the United States, the lowest in the G-7 nations, and the ninth lowest among all 29 OECD member states.

Table 3: Payroll tax* share of total taxation in OECD countries

	1996 rank**	Share of total taxation					% change		
		1980	1985	1990	1995	1996	1980-1996	1980-1990	1990-1996
				%				%	
New Zealand	1	...	0.7	1.8	0.9	1.0	...	...	-44.4
Denmark	2	1.8	4.6	3.7	3.6	3.5	94.4	105.6	-5.4
Australia	3	5.0	4.7	6.1	6.8	6.7	34.0	22.0	9.8
Iceland	4	6.0	6.0	6.8	8.1	8.7	45.0	13.3	27.9
Korea	5	1.6	2.0	5.7	8.4	9.5	493.8	256.3	66.7
Ireland	6	14.5	17.1	16.1	15.6	14.6	0.7	11.0	-9.3
Mexico	7	15.1	12.1	14.8	17.2	15.6	3.3	-2.0	5.4
Turkey	8	14.0	14.3	19.7	12.1	15.8	12.9	40.7	-19.8
Canada	9	10.5	13.5	14.3	16.3	16.3	55.2	36.2	14.0
United Kingdom	10	20.9	17.8	17.1	17.6	17.3	-17.2	-18.2	1.2
Norway	11	21.1	20.8	26.3	23.5	23.3	10.4	24.6	-11.4
United States	12	21.9	25.2	25.8	25.1	24.7	12.8	17.8	-4.3
Portugal	13	32.1	28.4	27.2	27.0	25.7	-19.9	-15.3	-5.5
Finland	14	19.6	17.9	21.7	27.5	25.8	31.6	10.7	18.9
OECD average†		24.5	23.6	23.8	25.9	25.8	5.4	-3.0	8.7
Luxembourg	15	29.7	26.8	27.3	26.8	26.6	-10.4	-8.1	-2.6
G-7 average		28.6	29.1	29.0	30.3	30.7	7.4	1.2	6.1
Greece	16	34.7	37.1	30.9	31.8	31.4	-9.5	-11.0	1.6
Poland	17	...	...	...	31.2	31.8	...	...	...
Belgium	18	30.4	32.1	33.6	33.1	32.3	6.3	10.5	-3.9
Sweden	19	31.4	28.7	29.7	31.3	32.3	2.9	-5.4	8.8
Hungary	20	...	...	...	36.2	33.9	...	...	...
Italy	21	38.6	35.3	33.2	32.0	34.4	-10.9	-14.0	3.6
Spain	22	48.6	41.3	35.4	36.2	35.9	-26.1	-27.2	1.4
Japan	23	29.1	30.3	29.0	36.3	36.5	25.4	-0.3	25.9
Switzerland	24	30.9	32.0	32.3	37.0	37.4	21.0	4.5	15.8
Netherlands	25	38.1	44.3	37.4	41.8	39.6	3.9	-1.8	5.9
Germany	26	34.5	36.5	37.5	39.4	40.6	17.7	8.7	8.3
Austria	27	37.9	37.5	38.9	42.9	41.1	8.4	2.6	5.7
Czech Republic	28	...	...	...	40.8	41.9	...	...	...
France	29	44.9	45.4	46.0	45.7	45.4	1.1	2.4	-1.3

Source: Organisation for Economic Co-operation and Development

* Sum of social security contributions and taxes on payrolls and workforce.

** From low to high (1 to 29).

† Excluding countries for which either the taxes are not applicable or the data are not available.

Perspectives

Acknowledgements

The author wishes to thank the following for their valuable comments: Nick Constantinidis (Ontario Ministry of Finance), Charles Duclos (Quebec Ministère des Finances), Katherine Fraser (Statistics Canada), Wayne Gray (Newfoundland Department of Finance) and Ralph

Moshenko (Manitoba Department of Finance). He is also grateful to John Baldwin, François Gendron, Jonathan Kesselman, Alan Macnaughton, Ian Macredie, Jack Mintz, Lars Osberg, Garnett Picot and Sylvie Ratté for comments and suggestions on early drafts.

■ Notes

1 Employer EI premiums have been equal to 1.4 times employee premiums since 1972. Employers and employees contribute to C/QPP equally; self-employed workers pay both employee and employer portions.

2 Adjustments for these overcontributions can be made using the T1 files of the Canada Customs and Revenue Agency (CCRA). However, the time series would be much shorter and would lead to an underestimate. The most appropriate way to address this issue would be to use the job-based T4 files of the CCRA, through which employer taxes are derived from employee contributions before adjustments for overcontributions. Employee contributions could be adjusted using the annual maximums. Again, the time series would be shorter.

3 C/QPP contributions of the self-employed are available from the T1 files.

4 All figures are in 1997 dollars. They are adjusted using the GDP implicit price index.

5 EI financing arrangements also changed in 1990: the federal government completely withdrew its contribution, and responsibility for the entire cost of funding benefits was shared by employees and employers (Lin, 2000 and 1998).

6 The OECD classification system divides total taxation into six main components: taxes on income, profits and capital gains; social security contributions; taxes on payrolls and workforce; taxes on property; taxes on goods and services; and other taxes.

7 Given that some countries have only social security contributions while others have taxes on payrolls and workforce as well, both classes are combined here as a single category, "payroll taxes," to improve international comparability. Most payroll-type taxes are placed among the OECD's social security contributions.

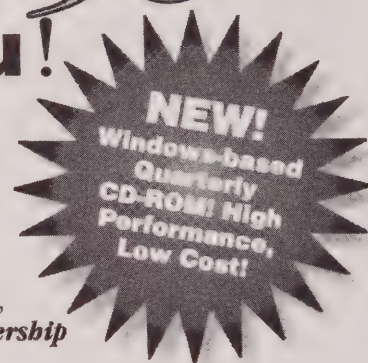
8 For the Czech Republic, Hungary, Poland and New Zealand, either the taxes have not been applicable or data have not been available for the entire period.

■ References

- Kesselman, J.R. *General Payroll Taxes: Economics, Politics, and Design*. Canadian Tax Paper no. 101. Toronto: Canadian Tax Foundation, 1997.
- Lin, Z. "Payroll taxes in Canada revisited: structure, statutory parameters, and recent trends." *Canadian Tax Journal*, forthcoming. A slightly different version, titled *Payroll Taxes in Canada Revisited: Structure, Policy Parameters and Recent Trends*, will soon be available as an analytical report issued by Statistics Canada. Catalogue no. 11F0019MPE, no. 149.
- . "Payroll taxes in Canada—structure and statutory parameters." *Perspectives on Labour and Income* (Statistics Canada, Catalogue no. 75-001-XPE) 12, no. 2 (Summer 2000): 19-27.
- . "Employment Insurance in Canada: Recent trends and policy changes." *Canadian Tax Journal* 46, no. 1 (April 1998): 58-76. Also available as an analytical report published by Statistics Canada (Catalogue no. 11F0019MPE, no. 125), Ottawa, 1998.
- Lin, Z., G. Picot and C. Beach. "What has happened to payroll taxes in Canada over the last three decades?" *Canadian Tax Journal* 44, no. 4 (October 1996): 1052-77. Also available as an analytical report published by Statistics Canada under the title *The Evolution of Payroll Taxes in Canada: 1961-1993* (Catalogue no. 11F0019MPE, no. 90), Ottawa, 1996.
- Organisation for Economic Co-operation and Development. *Revenue Statistics, 1965-1997*. Paris: OECD, 1998.
- Picot, G., Z. Lin and C. Beach. "Recent trends in employer payroll taxes." *Canadian Economic Observer* (Statistics Canada, Catalogue no. 11-010-XPB) 8, no. 9 (September 1995): 3.1-24.

Build on the range and depth of your knowledge and experience

Put the *power* of **Inter-Corporate Ownership** 1998 to work for you!



When you're working to stay on top of the volatile business environment, and dealing with increased client expectations and escalating competition, you know success boils down to one thing. Performance.

Inter-Corporate Ownership 1998 helps you meet your standards of excellence by providing you with accurate, timely and comprehensive business ownership information, while saving you valuable research time. Use this definitive guide to learn at a glance who owns and controls which companies, where their head offices are located, how they fit into the corporate hierarchy, and much more.

Knowledge = Power

Inter-Corporate Ownership 1998 provides you with value-added features you simply cannot get anywhere else, including:

- ▶ 89,000 comprehensive company listings, with approximately 11,000 foreign parent companies
- ▶ tens of thousands more listings than any comparable resource
- ▶ meticulously organized data, fully indexed for quick searches and easy cross referencing
- ▶ a choice of formats to better meet your particular information needs:
 - ★ CD-ROM
 - ★ hard-cover book

An indispensable resource for lawyers, analysts, investors, lobbyists, researchers and corporate executives,

Inter-Corporate Ownership 1998 will help you to:

- ▶ identify corporate pyramids and explore investment opportunities
- ▶ pinpoint marketing opportunities and target the right decision makers
- ▶ locate potential customers and learn about competitors
- ▶ trace changes in foreign control and uncover export opportunities
- ▶ fulfill due diligence requirements

Research business ownership questions more quickly,

reliably and easily with *Inter-Corporate Ownership 1998*. Put its powerful contents to work for you!



To order, CALL toll-free at 1 800 267-6677, FAX your VISA, MasterCard order to 1 877 287-4369 or MAIL your

order to Statistics Canada, Dissemination Division, Circulation Management, 120 Parkdale Avenue, Ottawa, Ontario, K1A 0T6, Canada. Or contact your nearest Statistics Canada Regional Reference Centre listed in this publication. You may also order via E-MAIL: order@statcan.ca. For brief queries on individual company listings, contact an account executive at one of the regional reference centres listed in this publication.

Special offers

on combination of ICO 98 Book & CD-ROM
also available! Call 1 800 263-1136
for details.

Product	Price *	United States (Shipping)	Other Countries (Shipping)
Book (Cat. No. 91-517-RPB)	\$350	Add \$6	Add \$10
CD-ROM (Cat. No. 91-517-RCD)			
single quarterly issue	\$350	Add \$6	Add \$10
annual subscription	\$995	Add \$24	Add \$40

* In Canada, please add HST and applicable PST or QST. No other taxes.

Non-unionized but covered by collective agreement

Ernest B. Akyeampong

In 1999, union membership in Canada totalled 3.6 million. In addition, more than a quarter million employees who were not union members were also covered by collective agreements. The latter group is referred to in this study as the “coverage-only” group (see *Data sources and definitions*). This group has seen its numbers decline in recent years, from 327,000 in 1997 to 287,000 in 1999. In contrast, union membership rose from 3,517,000 to 3,595,000 over the period.¹ Under what conditions can employees belong to the coverage-only group? Who are these employees; where do they work; and what positions do they hold? And how does the Canadian picture compare with that of the United States? This article aims to answer these questions.

What circumstances permit coverage-only status?

The circumstances under which an employee could be covered by a union-negotiated agreement without being a card-carrying union member are many and vary from firm to firm. They depend on the applicable provincial or federal labour legislation, labour relations practices and deep-rooted customs. However, they can be broadly classified into four groups.

The first group consists of those employees who exercise their rights under the so-called “Rand Formula,” which is based on a 1946 arbitration decision by Justice Ivan Rand. The original formula was based on the assumption that the union is essential for the security of all workers, and so employers must be allowed to collect union dues from all employees within a bargaining unit. This is the so-called “check-off” procedure. Under this formula, employees who choose not to belong to a union, because of religious conviction or other personal beliefs, are allowed to

remain outside the union but are expected to contribute union dues or an equivalent amount to a registered charitable organization. This way, they benefit from union-negotiated settlements without being union members. Though the Rand Formula has been incorporated into labour relations legislation in most provinces and in the federal jurisdiction, it is thought to be used by very few employees as a means of obtaining coverage-only status.²

The second group of coverage-only employees consists of foremen/women, supervisors and “lower-level” managers. It is generally believed that allowing such employees to become union members could compromise their supervisory or managerial obligations. They are therefore usually exempted from union membership, but allowed to share the terms accorded by union-negotiated settlements. Such employees may or may not be required to pay union dues. These union-exempt workers may form the bulk of the coverage-only group, though their exact numbers are unknown. (In all jurisdictions in Canada, workers dealing with confidential material [for example, human resources personnel] and those exercising senior managerial functions are exempted from both union membership and bargaining coverage.)

The third group consists of newly hired employees serving their probationary period. During that time, such employees may not be permitted to become card-carrying union members, although negotiated settlements are extended to them. Such workers are nonetheless expected to contribute union dues and their membership is automatic thereafter.

The fourth group of coverage-only employees consists of non-union members who have collective bargaining benefits through what can be described as “extension” or “matching.” Under this arrangement (formal or informal), settlements won by a union may be extended to non-union members working for the same firm. Typical of these are municipal workers, some of whom work outside the office (for example,

Ernest B. Akyeampong is with the Labour and Household Surveys Analysis Division. He can be reached at (613) 951-4624 or akeyeern@statcan.ca.

those who clear snow or collect garbage) and are unionized, and some of whom work inside (for example, clerical staff) and may not be unionized. Other examples are unionized outside construction workers and non-unionized inside clerical staff employed by private construction companies. Such non-unionized inside workers in these examples are sometimes referred to as "out-of-scope of bargaining unit" employees. In both situations, should the unionized workers reach a negotiated settlement, the same agreement could be extended to the non-unionized inside workers, who may or may not be required to pay union dues. Again, their numbers are not known.

Who are the coverage-only workers?

In 1999, approximately one in 13 (7.4%) employees covered by a union-negotiated agreement was not a union member. The likelihood of being a coverage-only worker (that is, covered by a collective agreement but not a union member) differs by sex, age, education and job tenure (Table). Men were just slightly more likely to belong to the coverage-only group than women: about one in 13, compared with one in 14 in 1999. By age, the coverage-only ratio was highest among youths (15 to 24). Approximately one in 8 youths with benefits did not belong to a union. And the incidence appeared to decline with age, reaching roughly one in 17 among workers aged 55 or older. This phenomenon was mirrored in the ratios by job tenure. Among covered employees with job tenure of one year or less (who tend to be young and/or may be serving their probationary period), almost one in 7

Table: Collective bargaining coverage, 1999

	Total	Union members		Coverage only	
	'000	'000	%	'000	%
Both sexes	3,882	3,595	92.6	287	7.4
Men	2,078	1,919	92.3	159	7.7
Women	1,804	1,676	92.9	128	7.1
Sector					
Public	2,006	1,893	94.4	113	5.6
Private	1,876	1,702	90.7	175	9.3
Age					
15 to 24	277	241	87.1	36	12.9
25 to 54	3,249	3,018	92.9	231	7.1
25 to 44	2,128	1,967	92.4	162	7.6
45 to 54	1,121	1,052	93.8	69	6.2
55 and over	356	335	94.2	21	5.8
Education					
Less than Grade 9	125	119	95.4	6	4.6
Some high school	399	373	93.5	26	6.5
High school graduation	743	697	93.7	47	6.3
Some postsecondary	297	270	91.1	27	8.9
Postsecondary certificate or diploma	1,447	1,340	92.6	107	7.4
University degree	871	795	91.3	76	8.7
Province					
Atlantic	270	257	95.2	13	4.8
Newfoundland	71	69	96.5	2	3.4
Prince Edward Island	15	14	92.8	1	7.2
Nova Scotia	105	100	95.5	5	4.5
New Brunswick	80	75	94.0	5	6.0
Quebec	1,124	1,007	89.6	117	10.4
Ontario	1,345	1,264	94.0	81	6.0
Prairies	608	554	91.1	54	8.9
Manitoba	165	156	94.2	10	5.8
Saskatchewan	127	118	93.1	9	6.9
Alberta	316	281	88.8	36	11.2
British Columbia	536	513	95.8	23	4.2
Industry					
Goods-producing	1,026	950	92.6	76	7.4
Agriculture	5	4	91.0	--	--
Natural resources	63	59	93.8	4	6.2
Utilities	83	78	93.8	5	6.2
Construction	161	151	93.9	10	6.1
Manufacturing	715	658	92.0	57	8.0
Service-producing	2,856	2,645	92.6	211	7.4
Trade	267	240	89.7	27	10.3
Transportation and warehousing	271	258	95.0	14	5.0
Finance, insurance, real estate and leasing	71	57	80.5	14	19.5
Professional, scientific and technical	33	23	72.0	9	28.0
Management, and administrative and support	44	39	87.7	5	12.3
Education	686	642	93.6	44	6.4
Health care and social assistance	683	651	95.3	32	4.7
Information, culture and recreation	154	143	92.6	11	7.4
Accommodation and food	58	52	90.2	6	9.8
Other	47	39	83.8	8	16.2
Public administration	541	501	92.5	41	7.5

Table: Collective bargaining coverage, 1999 (concluded)

	Total	Union members		Coverage only	
	'000	'000	%	'000	%
Occupation					
Management	111	82	73.5	29	26.5
Business, finance and administrative	631	575	91.2	56	8.8
Professional	57	51	89.3	6	10.7
Financial and administrative	176	157	89.2	19	10.8
Clerical	398	367	92.3	30	7.7
Natural and applied sciences	216	194	89.8	22	10.2
Health	426	409	95.8	18	4.2
Professional	31	26	85.7	4	14.3
Nursing	187	182	97.2	5	2.8
Technical	103	100	96.5	4	3.5
Support staff	106	101	95.6	5	4.4
Social and public service	592	560	94.7	31	5.3
Legal, social and religious	144	135	93.3	10	6.7
Teachers and professors	447	426	95.1	22	4.9
Secondary and elementary	360	349	96.9	11	3.1
Other	87	77	88.0	10	12.0
Culture and recreation	74	68	91.0	7	9.0
Sales and service	665	611	91.9	54	8.1
Wholesale	22	17	78.5	5	21.5
Retail	115	106	92.0	9	8.0
Food and beverage	44	41	92.4	3	7.6
Protective services	117	103	87.9	14	12.1
Child care and home support	78	72	92.0	6	8.0
Travel and accommodation	288	272	94.3	16	5.7
Trades, transport and equipment operators	661	624	94.5	37	5.5
Contractors and supervisors	27	23	82.8	5	17.2
Construction trades	83	81	97.5	2	2.5
Other trades	287	272	94.8	15	5.2
Transport equipment operators	170	160	93.9	10	6.1
Helpers and labourers	93	89	95.1	5	4.9
Unique to primary industries	43	40	93.5	3	6.5
Unique to production	464	433	93.3	31	6.7
Machine operators and assemblers	378	351	92.9	27	7.1
Labourers	86	82	95.1	4	4.9
Work status					
Full-time	3,388	3,133	92.5	256	7.5
Part-time	494	462	93.5	32	6.5
Workplace size					
Under 20 employees	562	500	88.9	62	11.1
20 to 99 employees	1,288	1,184	91.9	105	8.1
100 to 500 employees	1,203	1,124	93.4	79	6.6
Over 500 employees	829	788	95.0	41	5.0
Job tenure					
1 to 12 months	460	397	86.3	63	13.7
Over 1 year to 5 years	816	737	90.3	79	9.7
Over 5 years to 9 years	548	510	93.1	38	6.9
Over 9 years to 14 years	701	658	94.0	42	6.0
Over 14 years	1,357	1,292	95.2	65	4.8
Job status					
Permanent	3,522	3,274	93.0	248	7.0
Non-permanent	361	321	89.0	40	11.0

Source: Labour Force Survey

had benefits but did not belong to a union, a ratio that declined to about one in 20 for those with tenure of over 14 years (who tend to be older). Coverage-only status is also more common among employees with more education. In 1999, about one in 12 employees covered by union-negotiated settlements had university degrees, compared with about one in 20 of those with less than Grade 9.

Where do they work?

Place of work also influences the likelihood of having such benefits. In 1999, a non-union member working in the heavily unionized public sector was about half as likely to have benefits as one in the private sector: about one in 20 versus roughly one in 10.

Non-unionized employees in Quebec and Alberta were more likely than their counterparts in other provinces to be covered by union-negotiated agreements. In these two provinces slightly more than one in 10 employees with such benefits did not belong to a union. Indeed, Quebec had roughly 41% of all coverage-only workers in Canada, even though that province accounted for only 28% of all persons covered by such agreements in the country. The corresponding ratios were lower in the other provinces; from around one in 14 in Prince Edward Island and Saskatchewan to only one in 24 in British Columbia and one in 29 in Newfoundland.

Workplace size appears to be inversely associated with being a non-union member covered by a collective agreement. In firms with fewer than 20 employees, the coverage-only group accounted for one in 10 workers with union-negotiated benefits. The ratio

Data sources and definitions

Most of the data in this study come from the Labour Force Survey (LFS), a monthly survey covering approximately 53,000 households across the 10 provinces. Since January 1997, the LFS has been collecting estimates not only of union members, but also of other employees covered by the collective agreements signed by the unions. Similar data had been collected sporadically prior to January 1997, some through supplements to the LFS (for example, the 1995 Survey of Work Arrangements, the Adult Education and Training Survey, and the Survey of Union Membership) and other longitudinal surveys such as the Labour Market Activity Survey and the Survey of Labour and Income Dynamics. However, because some were month-specific and hence affected by seasonal factors, or because they covered an age group that differed from that of the LFS, this study focuses on the LFS annual data beginning 1997.

Prior to that year, most union data were provided under the *Corporations and Labour Unions Returns Act* (CALURA), the labour union part of which has recently been repealed. CALURA, through a survey of the unions, provided information on union membership (as at the end of each year) but not on the coverage-only group. It also offered only three socio-economic dimensions, namely, sex, industry and province. The LFS provides more detailed information, as well as dimensions not possible with CALURA data, such as full-time/part-time job status, workplace size, job permanency, job tenure, earnings and occupation.

The redesigned LFS asks the following questions in order to identify union members and coverage-only employees:

Is ... a union member at (name of main job)?

If no

Is ... covered by a union contract or collective agreement?

In the United States, monthly data on union membership and bargaining coverage have been available since 1983 from the Current Population Survey (CPS), the counterpart of Canada's LFS. Since 1994, the redesigned CPS has asked the following questions:

On this job, are you a member of a labor union or of an employee association similar to a union?

- ☐ Yes (if not yes, go to the next question)
- ☐ No
- ☐ Don't know
- ☐ Refused

On this job, are you covered by a union or employee association contract?

- ☐ Yes
- ☐ No
- ☐ Don't know
- ☐ Refused

Bargaining-coverage employees are members of a labour union or workers who are not union members but whose jobs are covered by a union contract.

Union members are employees who are card-carrying members of a union and thus eligible to partake in union deliberations and vote on decisions.

Coverage-only members are employees who are not union members, but whose jobs are covered by a union contract that extends to them the terms and benefits of a union-negotiated agreement. They may or may not pay union dues.

The coverage-only rate is the number of coverage-only members expressed as a proportion of bargaining-coverage employees.

decreased as firm size increased, and in the largest workplaces (over 500 employees) it fell to one in 20 employees.

The chances of being a non-union member covered by a union-negotiated agreement are identical in goods-producing and service-producing industries: about one in 13 persons in 1999. The incidence varied little among the major industries in the goods sector, whereas in the service industries it registered a high of one in 4 in professional,

scientific and technical services, about one in 8 in management, and administrative and support services, one in 16 in education, and only one in 20 in health care and social assistance.

What positions do they hold?

Union-negotiated benefits accorded to non-union members were most common among persons in managerial positions (slightly more than one in 4), followed closely by

workers in wholesale trade occupations (about one in 5) and by construction contractors and supervisors (about one in 6). Among employees in natural and applied science positions, in professional health positions, in other professional and administrative jobs, and in protective service jobs, approximately one in 10 had such benefits without belonging to a union. However, in occupations such as nursing and elementary and secondary school teaching, almost

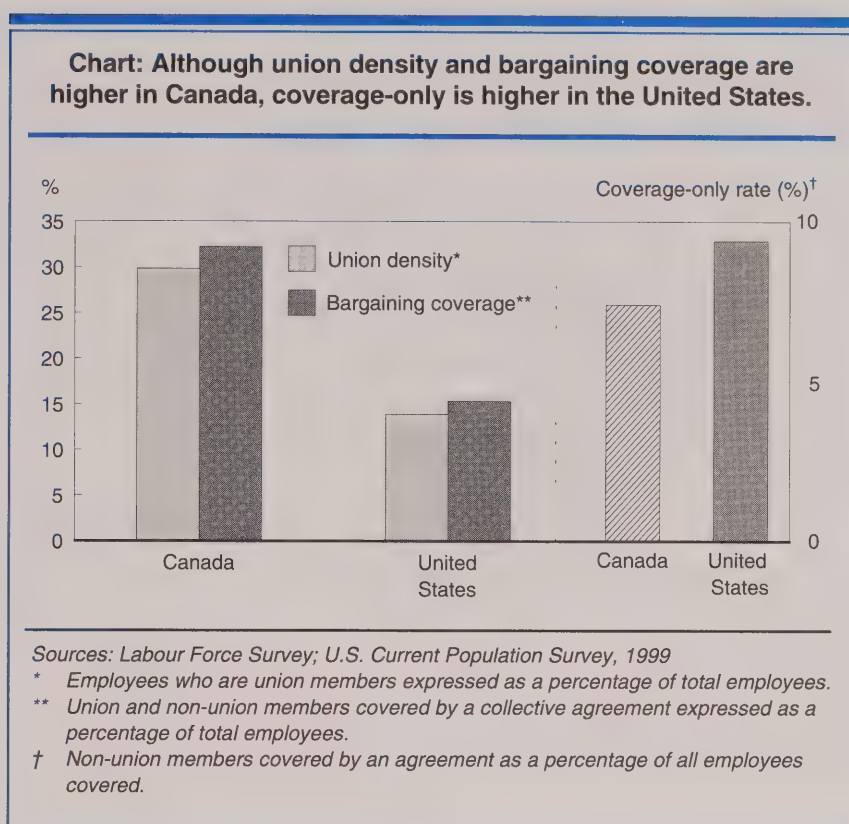
everyone covered by a union-negotiated settlement was a union member.

Representation of non-union members in bargaining coverage was also slightly higher among persons in full-time positions (about one in 13) than in part-time jobs (about one in 15) in 1999. However, only about one in 14 workers in permanent jobs had bargaining coverage, versus one in 9 workers in non-permanent jobs. The high coverage rate for the latter is in line with that observed among persons with job tenure of one year or less.

Canada/U.S. comparisons

In 1999, union density (the percentage of employees who are union members) and bargaining coverage rate (the proportion of employees covered by a union-negotiated agreement) in the United States (13.9% and 15.3%, respectively) were less than half those in Canada (29.8% and 32.2%) (Chart). The United States has a practice similar to the Rand Formula, referred to as the "agency shop practice," although this arrangement has not been adopted by many southern states. For this and other reasons—notably, the close integration of the two economies, and the membership of many workers from both countries in international unions—a comparison of the coverage-only rates and the composition of workers in this group seems appropriate.

In line with employment growth, trade union membership in the United States, as in Canada, has trended up recently, rising from



16.1 million in 1997 to 16.5 million in 1999. These increases have not been as strong as the growth in paid employment, though, causing union density in both countries to fall marginally over the period. Similarly, and as was the case in Canada, coverage-only employees south of the border saw their numbers decline, from 1.8 million to 1.7 million. The coverage-only rate has remained higher in the United States than in Canada, though both rates have exhibited some decline (from 8.5% to 7.4% in Canada, and from 10.0% to 9.4% in the United States). Expressed differently, in 1999 about one in 10 workers covered by a union-negotiated settlement in the United States was not

a union member; the comparable ratio for Canada was lower, about one in 13.

The sex composition of coverage-only workers also reveals some striking differences in the two countries. For example, in the United States women formed a slight majority (53%) in 1999; in Canada, men accounted for 55%. The youth presence was lower in the United States (8%) than in Canada (12%). Finally, this arrangement was more common in the public sector in the United States, where government workers accounted for 53% of this group, than it was in Canada (39%).

Summary

Settlements reached by unions through the collective bargaining process are shared not only by card-carrying union members but also by other employees. In 1999, union-negotiated agreements covered 3.6 million union members and another 287,000 non-union members. A non-union member can be covered by an agreement through one of four means: the exercise of rights under the Rand Formula; a declaration of coverage status by the employer (as in the case of many foremen/women, supervisors and lower level managers), coverage of newly hired employees serving their probationary periods, or the “extension” or “matching” practices used by some employers for certain out-of-scope employees.

The chances of enjoying union-negotiated benefits without belonging to a union are higher than average among young employees, workers with short job ten-

ure, those with higher education, and workers in managerial, professional and scientific positions. The likelihood is almost non-existent among nurses and teachers. This status is more common in Quebec and Alberta, and least so in the Atlantic provinces. It is slightly more common in the United States than in Canada, although in both countries the proportion of coverage-only workers has decreased recently.

Perspectives

■ Notes

- 1 For detailed Canadian figures for the first six months of 2000, see the accompanying update.
- 2 In addition to the federal jurisdiction, British Columbia, Saskatchewan, Manitoba, Ontario, Quebec and Newfoundland have incorporated mandatory Rand Formula provisions in their labour relations legislation.

Unionization—an update

Since 1997, the Labour Force Survey (LFS) has been the major source of data on unionization. The first detailed socio-demographic and economic profile of union members from the LFS was released in *Perspectives* on the eve of Labour Day 1997 and updated and expanded in 1998 and 1999 (Akyeampong, 1997, 1998 and 1999). This year's update extends the profile to the first half of 2000. As in past releases, data on earnings, wage settlements, inflation, and strikes and lockouts are also provided.

Some highlights follow:

Table 1: Union rates in 1999 and 2000

At 12.3 million, average paid employment (employees) during the first half of 2000 was 418,000 higher than that a year earlier. Union membership also grew, from 3.6 million to 3.7 million. This resulted in a rise in the union rate (density) from 30.0% to 30.4%.

This rise affected both men and women: men's rate rose from 30.7% to 31.1%, and women's, from 29.2% to 29.6%.

All of the increase occurred in the private sector, where it rose from 18.2% to 18.7%. Public sector union density actually fell from 70.5% to 69.9%.

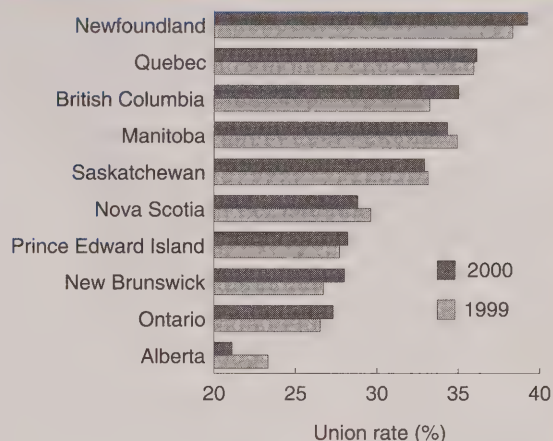
Six provinces recorded increases: Newfoundland, Prince Edward Island, New Brunswick, Quebec, Ontario and British Columbia. The Prairie provinces and Nova Scotia witnessed declines (Chart A).

The rate among full-time employees rose from 31.9% to 32.2%, and among part-time workers, from 21.6% to 22.0%.

Workers in both permanent and non-permanent jobs recorded increases in union density. However, among workers in the largest firms (those with more than 500 employees) the rate fell from 56.6% to 53.9%.

Unionization rose in 11 of the 16 major industry groups, but fell in the remaining 5, namely, agriculture; utilities; educational services; health care and social assistance; and information, culture and recreation services (Chart B).

Chart A: Newfoundland remains the most unionized province; Alberta, the least.



Source: Labour Force Survey, January-to-June averages

Among the 10 major occupational groups, union density rose in 6. The remaining 4 (natural and applied sciences; health; social and public services; and culture and recreation services) experienced declines (Chart C).

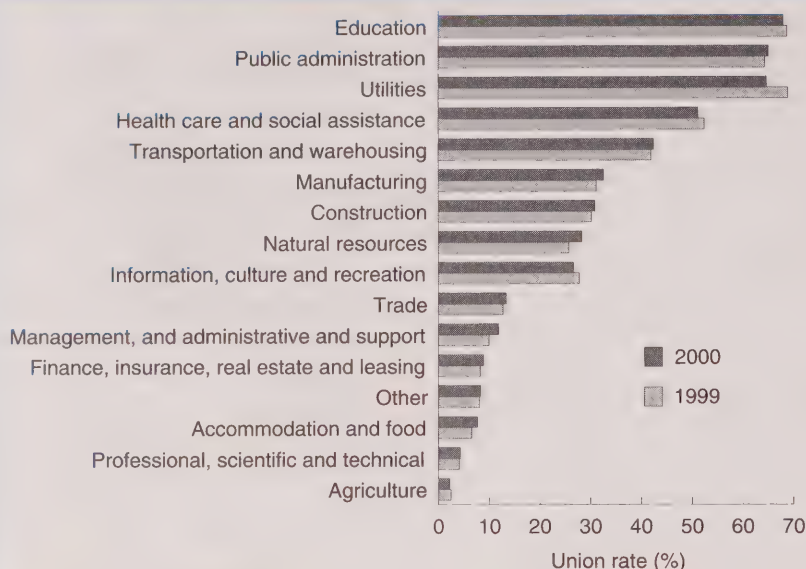
The number of employees who were not union members but were covered by collective agreements averaged 269,000, down from 296,000 a year earlier.

Tables 2A and 2B: 1999 annual averages

Approximately 3.6 million (29.8%) employees belonged to a union in 1999. An additional 287,000 (2.4%) were covered by a collective agreement.

Employees in the public sector, that is, those working for government, crown corporations, or publicly funded schools or hospitals, were almost four times as likely as their private sector counterparts to belong to a union (70.5% versus 18.1%).

Almost one in three full-time employees belonged to a union, compared with about one in five part-time workers. Also, almost one in three employees in a permanent position was a union member, compared with roughly one in five in a non-permanent job.

Chart B: The highest union rates were in public sector-dominated industries.

Source: Labour Force Survey, January-to-June averages

High union rates were found among employees aged 45 to 54 (41.4%), as well as those with university degrees (34.9%), workers in Newfoundland (38.6%) and Quebec (35.4%), those in educational services (68.8%), utilities (67.6%), and public administration (64.7%), and workers in health care positions (62.2%).

Low union rates were recorded by youths (15 to 24 years) (11.7%), workers in Alberta (22.5%), employees in agriculture (3.5%) and professional, scientific and technical industries (4.1%), and persons in management positions (8.6%).

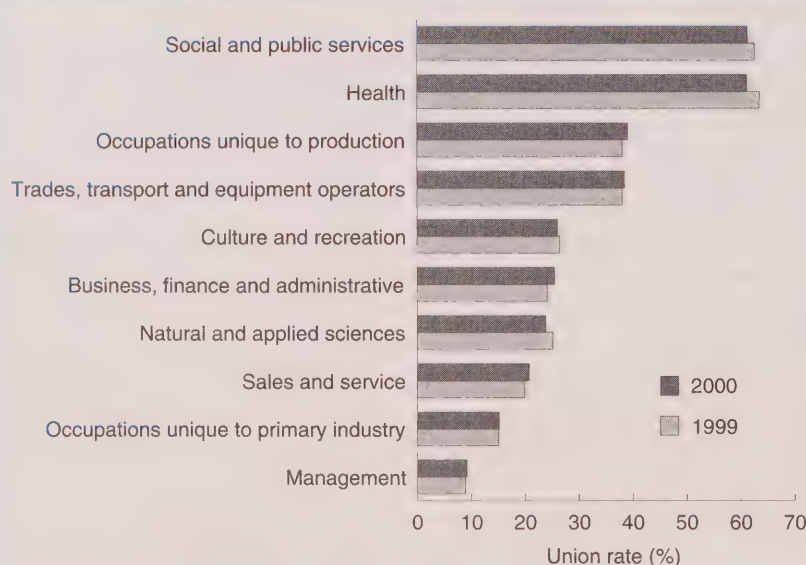
Differences between the sexes

Men's union rate (30.6%) in 1999 slightly exceeded that of women (28.9%).

The union rate among male part-time workers (15.9%) was less than half that of their full-time counterparts (32.2%). Among female employees, however, the gap was narrower (23.7% versus 30.7%).

Women's unionization in the public sector (71.9%) exceeded that of men (68.6%), reflecting their presence in public administration and in teaching and health positions. However, in the private sector only 12.8% were unionized, compared with 22.5% of men. The lower rate reflected women's predominance in sales and several service occupations.

A higher-than-average union rate was recorded among men with a postsecondary certificate or diploma (34.5%). For women, the highest rate was registered by those

Chart C: Unionization in community service occupations far outpaced that of others.

Source: Labour Force Survey, January-to-June averages

with a university degree (41.4%), reflecting unionization in occupations such as health care and teaching.

Men in permanent positions had slightly higher rates (31.9%) than women in similar positions (29.7%). Among employees in non-permanent positions, women were more unionized (23.4%) than men (20.7%).

Table 3: Average earnings and usual hours

Available data show that unionized jobs generally provide higher wages than non-unionized jobs. Of course, the wage rate differences reflect many factors in addition to collective bargaining outcomes. These include differences in the distribution of unionized and non-unionized employees by age, sex, job tenure, industry, occupation, firm size or geographical location. The effects of these factors are not examined in this article, but it is clear from the previous sections and Table 1 that unionized workers and jobs tend to have certain characteristics that are associated with higher wages. For example, union density ratios are higher among men, older workers, those with higher education, employees with long tenure, and those in larger firms. Clearly, not all differences in wage and non-wage benefits can be attributed to union status.

The Labour Force Survey data for 1999 show the following:

Average hourly earnings of unionized workers were higher than those of non-unionized workers. This held true whether they worked full time (\$19.43 versus \$15.99) or part time (\$16.66 versus \$9.94).

In addition to having higher hourly earnings, unionized part-time employees usually worked more hours each week than did non-unionized part-timers (19.6 hours versus 16.7). As a result, their average weekly earnings were roughly double those of the latter (\$333.78 versus \$169.01).

On average, full-time unionized women earned 90% of their male counterparts' hourly wages. In contrast, unionized women who worked part time earned 9% more than their male counterparts.

Table 4: Wage settlements, inflation and labour disputes

After lagging for three years, contract settlements in 1998 and 1999 surpassed inflation. But as of April 2000, wage settlements averaged 2.3%, a shade below the inflation rate (2.5%).

The gap between public and private sector wage gains widened once again in 1999, after narrowing during the preceding two years. Major wage gains in the public sector during the first four months of 2000 averaged 2.3%, compared with the 2.8% average in the private sector.

Annual statistics on strikes, lockouts and person-days lost are affected by several factors, including collective bargaining timetables, size of the unions involved, and the state of the economy. Collective bargaining timetables and union size determine the potential for industrial disputes, as well as the number of person-days lost in the event of a strike. The state of the economy influences the likelihood of an industrial dispute, given that one is technically possible.

With these factors in mind, the data show that labour unrest lost some steam in 1998 and 1999: 0.08% of working time was lost through strikes and lockouts in each of those two years, compared with 0.11% and 0.12% in 1996 and 1997. During the first quarter of 2000, the percentage of working time lost through strikes and lockouts (0.05%) was even lower.

References

- Akyeampong, E.B. "Unionization—an update." *Perspectives on Labour and Income* (Statistics Canada, Catalogue no. 75-001-XPE) 11, no. 3 (Autumn 1999): 45-65.
- . "The rise of unionization among women." *Perspectives on Labour and Income* (Statistics Canada, Catalogue no. 75-001-XPE) 10, no. 4 (Winter 1998): 30-43.
- . "A statistical portrait of the trade union movement." *Perspectives on Labour and Income* (Statistics Canada, Catalogue no. 75-001-XPE) 9, no. 4 (Winter 1997): 45-54.

Table 1: Union membership and coverage by selected characteristics

	1999*			2000*		
	Total employees	Density		Total employees	Density	
		Members	Coverage**		Members	Coverage**
	'000	%	%	'000	%	%
Both sexes	11,837	30.0	32.5	12,255	30.4	32.6
Men	6,108	30.7	33.4	6,335	31.1	33.5
Women	5,729	29.2	31.5	5,920	29.6	31.5
Sector†						
Public	2,666	70.7	75.1	2,786	69.9	73.7
Private	9,172	18.2	20.1	9,469	18.7	20.5
Age						
15 to 24	1,974	11.9	13.7	2,064	12.6	14.2
25 to 54	8,908	33.5	36.2	9,164	34.0	36.3
25 to 44	6,418	30.4	33.0	6,518	30.7	33.0
45 to 54	2,491	41.6	44.4	2,645	42.1	44.5
55 and over	955	34.7	37.0	1,028	33.9	35.9
Education						
Less than Grade 9	414	28.0	29.4	403	30.9	32.4
Some high school	1,569	23.7	25.3	1,597	24.1	25.7
High school graduation	2,487	27.6	29.6	2,634	28.2	30.1
Some postsecondary	1,135	22.4	24.6	1,255	22.7	24.5
Postsecondary certificate or diploma	4,002	33.5	36.3	4,004	34.0	36.3
University degree	2,230	35.1	38.6	2,362	34.7	37.9
Province						
Atlantic	831	30.3	31.7	855	30.6	32.1
Newfoundland	168	38.3	39.9	170	39.2	40.6
Prince Edward Island	47	27.7	30.5	51	28.2	29.5
Nova Scotia	340	29.6	30.6	354	28.8	30.3
New Brunswick	276	26.7	28.3	281	28.0	29.7
Quebec	2,783	35.9	40.3	2,875	36.1	39.7
Ontario	4,716	26.5	28.2	4,869	27.3	28.9
Prairies	2,019	27.5	30.4	2,100	26.0	28.4
Manitoba	442	34.9	36.9	456	34.3	37.0
Saskatchewan	352	33.1	35.6	365	32.9	35.3
Alberta	1,224	23.3	26.5	1,280	21.1	23.4
British Columbia	1,490	33.2	34.7	1,556	35.0	36.5
Work status						
Full-time	9,643	31.9	34.6	10,027	32.2	34.6
Part-time	2,194	21.6	23.0	2,228	22.0	23.3
Industry						
Goods-producing	2,963	30.8	33.4	3,108	32.0	34.4
Agriculture	119	2.4	2.7	116	2.1	2.7
Natural resources	217	25.7	27.5	223	28.2	30.1
Utilities	114	68.8	72.9	114	64.6	70.4
Construction	454	30.1	32.0	498	30.8	32.3
Manufacturing	2,059	31.1	33.9	2,157	32.5	35.2
Service-producing	8,874	29.7	32.2	9,147	29.8	31.9
Trade	1,880	12.7	14.2	1,950	13.3	14.8
Transportation and warehousing	595	41.9	44.4	638	42.4	44.2
Finance, insurance, real estate and leasing	732	8.2	10.1	725	8.8	10.4
Professional, scientific and technical	560	4.0	5.8	600	4.2	5.1
Management, and administrative and support	360	9.9	11.5	363	11.8	13.5
Education	949	68.7	73.5	965	67.9	71.8
Health care and social assistance	1,233	52.4	55.0	1,312	51.1	53.5
Information, culture and recreation	526	27.7	29.9	537	26.6	28.3
Accommodation and food	805	6.5	7.2	853	7.6	8.3
Other	460	8.1	10.0	443	8.2	9.5
Public administration	775	64.3	69.8	760	65.0	70.3

Table 1: Union membership and coverage by selected characteristics (concluded)

	1999*			2000*		
	Total employees	Density		Total employees	Density	
		Members	Coverage**		Members	Coverage**
	'000	%	%	'000	%	%
Occupation						
Management	969	8.8	12.2	944	9.1	12.2
Business, finance and administrative	2,336	24.1	26.7	2,343	25.4	27.5
Professional	306	15.9	17.9	292	17.1	19.4
Financial and administrative	739	21.1	24.1	681	23.9	25.9
Clerical	1,290	27.9	30.3	1,371	28.0	30.0
Natural and applied sciences	756	25.1	27.9	827	23.8	26.7
Health	657	63.4	66.0	673	61.1	63.6
Professional	74	37.6	43.4	74	38.1	42.6
Nursing	232	81.5	83.7	223	81.2	82.9
Technical	163	61.2	63.1	173	56.6	59.1
Support staff	188	53.1	55.7	204	51.3	53.8
Social and public service	904	62.5	65.9	926	61.2	64.7
Legal, social and religious workers	346	38.9	41.4	368	37.2	40.3
Teachers and professors	558	77.1	81.0	557	77.1	80.8
Secondary and elementary	406	87.9	91.0	401	87.3	89.8
Other	151	48.0	54.4	156	50.7	57.6
Culture and recreation	255	26.4	29.4	258	26.0	27.9
Sales and service	3,042	19.9	21.8	3,209	20.7	22.1
Wholesale	293	5.3	7.1	310	6.4	7.6
Retail	832	12.8	13.9	858	12.7	13.5
Food and beverage	446	9.1	9.9	476	8.9	9.6
Protective services	191	53.2	61.5	213	52.6	58.7
Child care and home support	224	33.6	36.4	237	32.6	34.4
Travel and accommodation	1,055	25.2	26.9	1,115	27.1	28.6
Trades, transport and equipment operators	1,603	38.0	40.4	1,678	38.4	40.1
Contractors and supervisors	76	28.3	34.3	93	32.5	35.3
Construction trades	187	39.9	41.0	189	41.0	42.5
Other trades	650	41.3	43.8	661	41.9	44.0
Transportation equipment operators	445	35.7	38.3	480	36.4	37.7
Helpers and labourers	244	34.8	36.6	255	33.1	34.6
Unique to primary industries	227	15.0	16.2	235	15.1	16.1
Unique to production	1,090	38.0	40.6	1,162	39.0	42.0
Machine operators and assemblers	867	38.1	40.9	968	38.9	41.9
Labourers	223	37.5	39.2	194	39.4	42.5
Workplace size						
Under 20 employees	4,122	12.2	13.8	4,074	12.4	13.8
20 to 99 employees	3,839	30.4	33.2	4,046	30.4	32.7
100 to 500 employees	2,481	44.0	47.3	2,621	44.7	47.5
Over 500 employees	1,396	56.6	59.4	1,513	53.9	56.7
Job tenure						
1 to 12 months	2,748	14.4	16.5	2,850	14.0	16.3
Over 1 year to 5 years	3,629	19.3	21.7	3,893	21.6	23.5
Over 5 years to 9 years	1,607	32.4	34.8	1,553	31.8	33.9
Over 9 years to 14 years	1,563	41.8	44.6	1,605	43.0	45.2
Over 14 years	2,290	55.9	58.9	2,354	55.1	57.7
Job status						
Permanent	10,490	30.9	33.3	10,853	31.2	33.4
Non-permanent	1,347	23.2	25.8	1,402	23.5	26.0

Source: Labour Force Survey

* January-to-June average.

** Union members and persons who are not union members, but who are covered by collective agreements (for example, some religious group members).

† Public sector: employees in government departments or agencies, crown corporations or publicly funded schools, hospitals or other institutions; private sector: all other wage and salary earners.

Table 2A: Union membership and coverage by sex and

No.		Both sexes					Men			
		Total	Union member		Union coverage*		Not a union member**	Total	Union member	
			Total	Density	Total	Density			Total	Density
		'000	'000	%	'000	%	'000	'000	'000	%
1	Total	12,068	3,595	29.8	3,882	32.2	8,186	6,265	1,919	30.6
	Sector †									
2	Public	2,683	1,893	70.5	2,006	74.7	678	1,104	758	68.6
3	Private	9,385	1,702	18.1	1,876	20.0	7,508	5,161	1,161	22.5
	Age									
4	15 to 24	2,064	241	11.7	277	13.4	1,787	1,066	136	12.7
5	25 to 54	9,030	3,018	33.4	3,249	36.0	5,781	4,665	1,589	34.1
6	25 to 44	6,489	1,967	30.3	2,128	32.8	4,361	3,376	1,035	30.7
7	45 to 54	2,541	1,052	41.4	1,121	44.1	1,419	1,289	554	43.0
8	55 and over	974	335	34.4	356	36.5	618	534	195	36.4
	Education									
9	Less than Grade 9	435	119	27.4	125	28.7	310	274	85	30.9
10	Some high school	1,607	373	23.2	399	24.8	1,208	936	251	26.8
11	High school graduation	2,561	697	27.2	743	29.0	1,817	1,289	400	31.0
12	Some postsecondary	1,172	270	23.1	297	25.3	875	581	152	26.2
13	Postsecondary certificate or diploma	4,019	1,340	33.4	1,447	36.0	2,572	2,040	704	34.5
14	University degree	2,274	795	34.9	871	38.3	1,404	1,146	328	28.6
	Province									
15	Atlantic	862	257	29.8	270	31.4	591	441	134	30.4
16	Newfoundland	178	69	38.6	71	40.0	107	92	37	40.0
17	Prince Edward Island	50	14	27.4	15	29.5	35	24	6	23.3
18	Nova Scotia	348	100	28.7	105	30.0	244	177	52	29.2
19	New Brunswick	285	75	26.2	80	27.9	206	148	40	27.0
20	Quebec	2,844	1,007	35.4	1,124	39.5	1,720	1,512	559	37.0
21	Ontario	4,792	1,264	26.4	1,345	28.1	3,447	2,478	687	27.7
22	Prairies	2,057	554	26.9	608	29.6	1,449	1,068	269	25.2
23	Manitoba	448	156	34.8	165	36.9	282	229	76	33.2
24	Saskatchewan	360	118	32.7	127	35.2	233	181	54	29.8
25	Alberta	1,250	281	22.5	316	25.3	933	657	139	21.1
26	British Columbia	1,514	513	33.9	536	35.4	978	767	270	35.2
	Work status									
27	Full-time	9,918	3,133	31.6	3,388	34.2	6,530	5,647	1,820	32.2
28	Part-time	2,150	462	21.5	494	23.0	1,656	618	98	15.9
	Industry									
29	Goods-producing	3,086	950	30.8	1,026	33.2	2,060	2,317	806	34.8
30	Agriculture	127	4	3.5	5	3.8	122	81	2	2.9
31	Natural resources	221	59	26.8	63	28.6	158	189	56	29.7
32	Utilities	115	78	67.6	83	72.0	32	87	63	71.6
33	Construction	503	151	29.9	161	31.9	343	445	149	33.4
34	Manufacturing	2,120	658	31.0	715	33.7	1,405	1,516	537	35.4
35	Service-producing	8,982	2,645	29.4	2,856	31.8	6,126	3,948	1,113	28.2
36	Trade	1,920	240	12.5	267	13.9	1,653	963	136	14.1
37	Transportation and warehousing	612	258	42.1	271	44.4	340	465	200	43.1
38	Finance, insurance, real estate and leasing	734	57	7.8	71	9.7	662	260	19	7.5
39	Professional, scientific and technical	572	23	4.1	33	5.7	540	289	16	5.4
40	Management, and administrative and support	368	39	10.5	44	11.9	324	194	26	13.4
41	Education	933	642	68.8	686	73.6	247	337	222	65.9
42	Health care and social assistance	1,249	651	52.1	683	54.7	565	204	106	51.9
43	Information, culture and recreation	538	143	26.5	154	28.7	384	279	74	26.5
44	Accommodation and food	826	52	6.3	58	7.0	768	315	23	7.3
45	Other	457	39	8.6	47	10.2	410	227	20	9.0
46	Public administration	774	501	64.7	541	70.0	232	415	270	65.1

selected characteristics, 1999

Men			Women						
Union coverage*		Not a union member**	Total	Union member		Union coverage*		Not a union member**	No.
Total	Density			Total	Density	Total	Density		
'000	%	'000	'000	'000	%	'000	%	'000	
2,078	33.2	4,187	5,803	1,676	28.9	1,804	31.1	3,999	1
811	73.5	293	1,579	1,135	71.9	1,195	75.7	384	2
1,267	24.6	3,894	4,224	541	12.8	609	14.4	3,615	3
157	14.7	909	998	105	10.6	120	12.0	878	4
1,714	36.7	2,951	4,365	1,430	32.8	1,536	35.2	2,829	5
1,122	33.2	2,253	3,114	932	29.9	1,006	32.3	2,108	6
592	45.9	698	1,251	498	39.8	530	42.3	722	7
208	38.8	327	440	141	32.0	148	33.7	292	8
89	32.6	185	161	35	21.5	36	22.2	125	9
267	28.5	669	671	122	18.2	132	19.7	539	10
424	32.9	865	1,272	297	23.4	320	25.2	952	11
168	28.9	413	592	118	19.9	129	21.9	462	12
760	37.3	1,280	1,979	637	32.2	687	34.7	1,292	13
371	32.4	775	1,128	467	41.4	500	44.3	629	14
141	32.1	300	420	123	29.3	129	30.6	292	15
38	41.6	54	86	32	37.2	33	38.3	53	16
6	25.7	18	26	8	31.2	8	33.0	17	17
55	30.8	123	171	48	28.1	50	29.3	121	18
42	28.7	105	137	35	25.4	37	27.1	100	19
625	41.3	887	1,332	447	33.6	499	37.5	833	20
730	29.5	1,747	2,315	577	24.9	615	26.6	1,700	21
300	28.1	768	989	285	28.8	308	31.1	681	22
82	35.6	148	219	80	36.5	84	38.3	135	23
59	32.5	122	178	64	35.7	68	37.9	111	24
160	24.3	498	592	142	24.0	157	26.4	436	25
282	36.8	485	746	243	32.6	254	34.0	493	26
1,971	34.9	3,676	4,271	1,312	30.7	1,417	33.2	2,854	27
107	17.4	511	1,532	364	23.7	387	25.2	1,145	28
862	37.2	1,455	769	144	18.7	164	21.3	606	29
3	3.4	78	46	2	4.4	2	4.5	44	30
60	31.5	129	32	3	9.7	4	11.1	28	31
66	75.6	21	28	15	54.9	17	60.8	11	32
158	35.6	286	59	2	3.5	2	4.0	57	33
576	38.0	940	604	121	20.1	139	23.0	466	34
1,216	30.8	2,732	5,033	1,532	30.4	1,640	32.6	3,393	35
151	15.6	812	957	104	10.9	117	12.2	840	36
212	45.5	254	146	57	39.1	59	40.7	87	37
24	9.1	236	474	38	8.0	48	10.1	426	38
21	7.3	268	283	8	2.7	11	4.0	272	39
30	15.4	164	174	13	7.2	14	8.1	160	40
241	71.7	95	596	420	70.4	445	74.6	151	41
114	55.8	90	1,045	545	52.2	570	54.5	475	42
81	28.9	199	258	69	26.6	73	28.4	185	43
25	8.0	290	511	29	5.7	33	6.5	478	44
25	11.1	202	230	19	8.1	21	9.3	208	45
293	70.6	122	359	230	64.2	248	69.3	110	46

Table 2A: Union membership and coverage by sex and

No.		Both sexes					Men			
		Total	Union member		Union coverage*		Not a union member**	Total	Union member	
			Total	Density	Total	Density			Total	Density
		'000	'000	%	'000	%	'000	'000	'000	%
Occupation										
1	Management	945	82	8.6	111	11.7	834	586	47	8.0
2	Business, finance and administrative	2,347	575	24.5	631	26.9	1,717	631	172	27.2
3	Professional	304	51	16.6	57	18.6	248	136	25	18.3
4	Financial and administrative	722	157	21.8	176	24.4	545	101	24	24.2
5	Clerical	1,322	367	27.8	398	30.1	924	394	123	31.1
6	Natural and applied sciences	789	194	24.6	216	27.4	573	625	158	25.4
7	Health	656	409	62.2	426	65.0	230	98	52	52.9
8	Professional	73	26	35.8	31	41.8	43	27	6	20.8
9	Nursing	227	182	80.2	187	82.5	40	15	13	86.1
10	Technical	168	100	59.1	103	61.2	65	34	17	51.7
11	Support staff	188	101	53.8	106	56.3	82	23	16	70.2
12	Social and public service	904	560	62.0	592	65.4	313	339	195	57.6
13	Legal, social and religious workers	350	135	38.4	144	41.2	206	131	44	33.6
14	Teachers and professors	554	426	76.8	447	80.8	107	208	151	72.7
15	Secondary and elementary	395	349	88.3	360	91.1	35	119	105	88.7
16	Other	159	77	48.4	87	55.0	71	89	46	51.4
17	Culture and recreation	267	68	25.4	74	27.9	192	115	32	27.5
18	Sales and service	3,095	611	19.7	665	21.5	2,430	1,294	293	22.7
19	Wholesale	291	17	5.9	22	7.6	269	181	11	5.9
20	Retail	851	106	12.5	115	13.5	736	250	28	11.4
21	Food and beverage	463	41	8.8	44	9.5	419	176	17	9.6
22	Protective services	196	103	52.7	117	60.0	78	157	85	54.2
23	Child care and home support	219	72	32.9	78	35.7	140	15	7	46.1
24	Travel and accommodation	1,075	272	25.3	288	26.8	787	514	145	28.2
25	Trades, transport and equipment operators	1,672	624	37.3	661	39.5	1,011	1,574	598	38.0
26	Contractors and supervisors	82	23	27.5	27	33.3	55	77	21	27.8
27	Construction trades	206	81	39.4	83	40.4	123	202	81	39.8
28	Other trades	658	272	41.3	287	43.6	371	629	264	42.1
29	Transportation equipment operators	463	160	34.6	170	36.8	293	429	149	34.7
30	Helpers and labourers	263	89	33.7	93	35.4	170	238	83	34.9
31	Unique to primary industries	252	40	15.8	43	16.9	210	206	36	17.5
32	Unique to production	1,140	433	37.9	464	40.7	676	797	335	42.1
33	Machine operators and assemblers	924	351	38.0	378	40.9	546	660	276	41.9
34	Labourers	216	82	37.7	86	39.7	130	137	59	43.0
Workplace size										
35	Under 20 employees	4,154	500	12.0	562	13.5	3,592	2,009	279	13.9
36	20 to 99 employees	3,945	1,184	30.0	1,288	32.7	2,657	2,071	583	28.1
37	100 to 500 employees	2,548	1,124	44.1	1,203	47.2	1,345	1,401	630	44.9
38	Over 500 employees	1,421	788	55.4	829	58.3	592	785	427	54.5
Job tenure										
39	1 to 12 months	2,883	397	13.8	460	16.0	2,423	1,483	216	14.6
40	Over 1 year to 5 years	3,700	737	19.9	816	22.1	2,883	1,891	384	20.3
41	Over 5 years to 9 years	1,585	510	32.2	548	34.6	1,037	787	247	31.4
42	Over 9 years to 14 years	1,583	658	41.6	701	44.3	882	770	312	40.6
43	Over 14 years	2,318	1,292	55.8	1,357	58.6	961	1,335	760	56.9
Job status										
44	Permanent	10,610	3,274	30.9	3,522	33.2	7,088	5,538	1,769	31.9
45	Non-permanent	1,459	321	22.0	361	24.7	1,098	728	150	20.7

Source: Labour Force Survey

* Union members and persons who are not union members, but who are covered by collective agreements (for example, some religious group members).

selected characteristics, 1999 (concluded)

Men			Women						
Union coverage*		Not a union member**	Total	Union member		Union coverage*		Not a union member**	No.
Total	Density			Total	Density	Total	Density		
'000	%	'000	'000	'000	%	'000	%	'000	
66	11.2	521	358	34	9.6	45	12.6	313	1
186	29.5	445	1,717	403	23.5	445	25.9	1,272	2
28	20.3	108	168	26	15.3	29	17.3	139	3
27	26.4	74	621	133	21.4	150	24.1	471	4
132	33.4	262	927	244	26.4	266	28.7	661	5
176	28.2	449	164	36	21.6	40	24.3	124	6
56	57.1	42	558	357	63.9	370	66.4	188	7
8	29.6	19	47	21	44.3	23	48.7	24	8
13	88.6	2	211	169	79.7	174	82.1	38	9
18	53.8	16	135	82	61.0	85	63.1	50	10
17	73.2	6	165	85	51.5	89	53.9	76	11
209	61.7	130	565	365	64.6	382	67.7	183	12
47	36.0	84	219	91	41.3	97	44.3	122	13
162	77.9	46	346	274	79.3	285	82.5	61	14
109	92.0	10	276	243	88.1	251	90.7	26	15
53	59.1	36	70	31	44.6	35	49.8	35	16
34	29.7	81	152	36	23.8	40	26.5	112	17
323	24.9	971	1,802	318	17.6	343	19.0	1,459	18
14	7.6	167	111	7	6.0	8	7.5	102	19
32	12.8	219	601	78	12.9	83	13.9	518	20
18	10.4	157	288	24	8.3	26	9.0	262	21
97	61.5	60	39	18	46.8	21	53.6	18	22
8	51.4	7	203	65	31.9	70	34.5	133	23
154	29.9	360	561	127	22.6	134	24.0	426	24
632	40.2	942	97	26	26.8	28	29.2	69	25
26	33.2	51	5	1	23.3	2	34.0	3	26
83	40.8	120	4	1	18.3	1	18.8	3	27
279	44.3	350	29	7	25.3	8	28.0	21	28
158	37.0	270	34	11	32.9	12	34.7	22	29
87	36.6	151	25	6	22.2	6	23.6	19	30
39	18.8	168	46	4	8.3	4	8.6	42	31
358	44.9	439	343	97	28.4	106	30.8	237	32
296	44.8	364	264	75	28.3	82	31.0	182	33
62	45.2	75	80	23	28.7	24	30.2	56	34
313	15.6	1,696	2,145	220	10.3	249	11.6	1,896	35
639	30.9	1,432	1,874	601	32.1	649	34.6	1,225	36
676	48.3	724	1,147	494	43.1	527	45.9	620	37
450	57.3	335	636	360	56.6	379	59.5	257	38
251	16.9	1,232	1,400	181	12.9	209	14.9	1,191	39
428	22.6	1,463	1,809	354	19.6	389	21.5	1,420	40
268	34.1	519	798	263	32.9	280	35.0	519	41
331	43.0	439	813	346	42.6	370	45.5	443	42
800	60.0	535	983	533	54.2	557	56.7	426	43
1,908	34.4	3,630	5,072	1,505	29.7	1,614	31.8	3,458	44
171	23.5	557	731	171	23.4	190	26.0	541	45

** Workers who are neither union members nor covered by collective agreements.

† Public sector: employees in government departments or agencies, crown corporations or publicly funded schools, hospitals or other institutions; private sector: all other wage and salary earners.

Table 2B: Union membership and coverage by province and

No.		Atlantic					Quebec			
		Total	Union member		Union coverage*		Not a union member**	Total	Union member	
			Total	Density	Total	Density			Total	Density
		'000	'000	%	'000	%	'000	'000	%	
1	Total	862	257	29.8	270	31.4	591	2,844	1,007	35.4
Sector †										
2	Public	244	169	69.1	176	72.2	68	655	500	76.4
3	Private	618	89	14.3	94	15.2	524	2,190	507	23.1
Sex										
4	Men	441	134	30.4	141	32.1	300	1,512	559	37.0
5	Women	420	123	29.3	129	30.6	292	1,332	447	33.6
Age										
6	15 to 24	144	9	6.5	11	7.7	133	464	80	17.3
7	25 to 54	655	226	34.5	236	36.1	419	2,164	846	39.1
8	25 to 44	462	141	30.6	148	32.1	314	1,531	549	35.9
9	45 to 54	193	85	43.9	88	45.6	105	633	297	46.9
10	55 and over	63	22	34.3	23	36.3	40	216	80	36.9
Education										
11	Less than Grade 9	36	9	26.0	10	26.7	27	168	53	31.8
12	Some high school	123	24	19.7	25	20.3	98	359	112	31.1
13	High school graduation	165	36	21.8	38	22.8	127	503	170	33.9
14	Some postsecondary	71	13	18.4	14	19.6	57	222	57	25.9
15	Postsecondary certificate or diploma	328	118	36.0	123	37.7	204	1,061	400	37.7
16	University degree	139	56	40.6	61	43.7	78	532	213	40.1
Work status										
17	Full-time	718	234	32.6	246	34.2	472	2,364	875	37.0
18	Part-time	144	23	15.9	24	17.0	119	480	132	27.4
Industry										
19	Goods-producing	193	56	29.3	59	30.6	134	783	286	36.5
20	Agriculture	11	0	2.6	0	2.6	11	24	2	9.7
21	Natural resources	27	9	31.7	9	33.1	18	32	8	24.0
22	Utilities	8	5	65.7	5	66.8	3	27	19	72.7
23	Construction	42	10	23.3	10	24.3	32	90	43	47.1
24	Manufacturing	104	32	31.1	34	32.7	70	611	214	35.0
25	Service-producing	669	201	30.0	211	31.6	458	2,061	721	35.0
26	Trade	147	9	5.9	10	6.6	138	439	66	15.0
27	Transportation and warehousing	44	20	44.3	20	46.3	24	139	55	39.2
28	Finance, insurance, real estate and leasing	41	2	4.8	2	5.5	38	151	23	15.3
29	Professional, scientific and technical	25	1	3.2	1	4.0	24	131	5	4.2
30	Management, and administrative and support	25	1	3.8	1	5.2	23	76	13	17.2
31	Education	73	49	68.2	52	71.5	21	226	166	73.7
32	Health care and social assistance	111	63	57.0	66	59.2	45	290	177	61.0
33	Information, culture and recreation	33	8	24.0	8	25.0	25	122	45	36.9
34	Accommodation and food	61	3	4.7	3	4.9	58	176	15	8.6
35	Other	38	2	5.3	2	5.9	35	111	15	13.5
36	Public administration	72	43	60.4	46	63.6	26	201	141	70.1

selected characteristics, 1999

Quebec			Ontario						
Union coverage*		Not a union member**	Union member			Union coverage*		Not a union member**	No.
Total	Density		Total	Total	Density	Total	Density		
'000	%	'000	'000	'000	%	'000	%	'000	
1,124	39.5	1,720	4,792	1,264	26.4	1,345	28.1	3,447	1
528	80.7	126	957	625	65.3	666	69.6	291	2
595	27.2	1,594	3,836	639	16.7	679	17.7	3,157	3
625	41.3	887	2,478	687	27.7	730	29.5	1,747	4
499	37.5	833	2,315	577	24.9	615	26.6	1,700	5
95	20.5	369	793	74	9.4	85	10.7	708	6
942	43.5	1,222	3,591	1,058	29.5	1,122	31.2	2,469	7
623	40.7	908	2,604	694	26.6	734	28.2	1,870	8
320	50.5	313	986	364	36.9	387	39.3	599	9
86	39.9	130	409	132	32.3	138	33.8	271	10
58	34.4	110	150	41	27.4	42	28.0	108	11
126	34.9	234	634	137	21.5	142	22.4	492	12
188	37.4	315	1,074	274	25.5	287	26.7	787	13
66	30.0	155	475	100	21.1	109	22.9	366	14
447	42.2	614	1,472	429	29.1	457	31.1	1,015	15
239	44.9	293	987	283	28.7	308	31.2	679	16
981	41.5	1,383	3,959	1,121	28.3	1,193	30.1	2,766	17
142	29.6	338	833	143	17.1	152	18.2	682	18
321	41.0	462	1,328	401	30.2	423	31.9	904	19
2	10.1	21	42	0	0.4	0	0.4	42	20
9	28.0	23	34	13	39.2	14	40.5	20	21
20	76.9	6	49	34	68.2	35	70.2	15	22
45	50.3	45	190	59	30.9	62	32.6	128	23
244	39.9	367	1,012	296	29.2	313	30.9	699	24
803	38.9	1,258	3,464	862	24.9	921	26.6	2,543	25
82	18.6	357	739	83	11.2	88	11.9	652	26
58	42.0	81	210	79	37.6	82	39.0	128	27
32	21.4	119	332	13	4.0	14	4.3	317	28
11	8.6	120	253	11	4.2	12	4.7	241	29
16	20.8	60	167	16	9.6	17	10.2	150	30
178	78.8	48	347	234	67.6	249	71.7	98	31
189	65.1	101	449	184	40.9	192	42.7	257	32
49	40.4	73	219	44	19.9	47	21.6	172	33
18	10.0	158	301	16	5.2	17	5.5	284	34
19	17.5	91	162	10	6.4	12	7.4	150	35
150	74.8	51	285	173	60.6	192	67.3	93	36

Table 2B: Union membership and coverage by province and

No.	Atlantic						Quebec		
	Total	Union member		Union coverage*		Not a union member**	Total	Union member	
		Total	Density	Total	Density			Total	Density
	'000	'000	%	'000	%	'000	'000	'000	%
Occupation									
1 Management	55	6	11.2	7	13.3	48	202	16	7.7
2 Business, finance and administrative	150	40	26.3	42	27.8	109	569	175	30.8
3 Professional	15	3	19.2	3	21.9	12	73	16	21.2
4 Financial and administrative	46	11	24.0	12	26.1	34	199	58	29.0
5 Clerical	89	26	28.6	27	29.7	63	297	102	34.5
6 Natural and applied sciences	46	16	35.7	17	38.2	28	189	58	30.8
7 Health	60	40	67.8	42	70.3	18	168	116	68.8
8 Professional	6	3	47.2	3	54.5	3	22	8	36.2
9 Nursing	23	19	84.0	20	86.8	3	54	47	86.8
10 Technical	17	12	71.0	12	72.1	5	40	28	68.8
11 Support staff	14	6	45.7	7	47.5	7	52	33	63.6
12 Social and public service	65	39	59.4	41	62.5	24	221	158	71.6
13 Legal, social and religious workers	23	8	33.1	8	35.3	15	79	43	54.7
14 Teachers and professors	42	31	74.0	32	77.6	9	142	115	80.9
15 Secondary and elementary	29	25	87.0	26	90.1	3	97	87	89.9
16 Other	13	6	44.1	6	48.9	6	46	28	61.8
17 Culture and recreation	16	4	26.1	4	27.8	11	70	19	26.7
18 Sales and service	245	38	15.4	40	16.3	205	689	159	23.1
19 Wholesale	17	1	5.0	1	6.0	16	71	6	8.3
20 Retail	71	3	4.9	4	5.4	67	178	27	15.2
21 Food and beverage	35	3	8.8	3	9.2	32	109	10	9.4
22 Protective services	16	6	37.8	7	41.4	9	47	31	65.9
23 Child care and home support	21	4	18.4	4	20.1	17	40	16	38.9
24 Travel and accommodation	86	21	23.9	21	24.5	65	243	69	28.5
25 Trades, transport and equipment operators	133	48	35.9	49	36.9	84	381	169	44.3
26 Contractors and supervisors	6	2	34.1	2	36.8	4	17	5	29.2
27 Construction trades	20	6	29.8	6	30.1	14	43	28	66.2
28 Other trades	46	19	42.2	20	43.2	26	164	78	47.9
29 Transportation equipment operators	40	15	37.1	15	38.2	24	107	36	33.3
30 Helpers and labourers	23	6	26.5	6	28.0	16	51	22	42.5
31 Unique to primary industries	31	5	15.9	5	17.2	25	41	8	18.6
32 Unique to production	61	22	35.6	22	36.6	39	313	129	41.1
33 Machine operators and assemblers	45	16	35.9	16	36.6	28	250	102	40.9
34 Labourers	16	6	34.8	6	36.6	10	63	26	41.8
Workplace size									
35 Under 20 employees	369	51	13.8	54	14.7	315	921	124	13.5
36 20 to 99 employees	275	94	34.3	99	36.1	176	910	314	34.5
37 100 to 500 employees	151	72	47.5	75	49.9	76	636	331	52.1
38 Over 500 employees	66	40	60.3	41	62.3	25	377	236	62.6
Job tenure									
39 1 to 12 months	251	34	13.5	38	15.2	213	657	110	16.8
40 Over 1 year to 5 years	227	46	20.3	49	21.5	178	811	197	24.3
41 Over 5 years to 9 years	97	31	32.1	32	33.1	65	362	132	36.4
42 Over 9 years to 14 years	108	45	42.1	47	43.9	60	373	169	45.1
43 Over 14 years	178	101	56.5	104	58.2	74	640	399	62.3
Job status									
44 Permanent	681	219	32.2	228	33.5	452	2,459	893	36.3
45 Non-permanent	181	38	21.1	42	23.2	139	385	113	29.4

selected characteristics, 1999 (continued)

Quebec			Ontario						
Union coverage*		Not a union member**	Total	Union member		Union coverage*		Not a union member**	No.
Total	Density			Total	Density	Total	Density		
'000	%	'000	'000	'000	%	'000	%	'000	
27	13.3	175	397	30	7.6	38	9.6	359	1
201	35.4	367	950	182	19.1	197	20.7	753	2
19	25.7	54	136	17	12.4	18	13.3	118	3
68	34.0	131	268	46	17.2	50	18.8	217	4
115	38.8	182	547	119	21.7	128	23.5	418	5
66	35.0	123	333	61	18.2	68	20.3	265	6
121	72.2	47	233	114	48.8	119	51.1	114	7
9	43.3	12	26	5	20.2	6	23.4	20	8
49	89.4	6	81	54	66.6	56	69.2	25	9
29	71.2	12	61	27	44.0	28	45.6	33	10
35	67.2	17	66	28	42.7	30	44.8	37	11
167	75.3	55	351	204	58.2	213	60.8	138	12
46	58.4	33	141	44	31.2	47	33.6	94	13
121	84.7	22	210	160	76.2	166	79.0	44	14
90	92.6	7	154	138	89.6	141	91.7	13	15
31	67.9	15	56	22	39.3	25	43.9	31	16
22	30.9	49	109	24	21.8	25	23.3	84	17
182	26.4	507	1,172	216	18.5	233	19.9	939	18
10	13.9	61	115	5	4.2	5	4.2	110	19
32	18.1	146	344	40	11.7	43	12.4	301	20
12	11.1	97	156	12	7.9	13	8.3	143	21
33	71.0	14	79	41	52.2	49	62.7	29	22
18	43.6	23	81	23	28.8	25	30.5	56	23
77	31.7	166	398	94	23.7	98	24.7	300	24
184	48.2	198	619	219	35.3	228	36.8	392	25
6	37.5	11	29	6	21.8	8	28.0	21	26
29	68.2	14	68	28	40.6	28	41.1	40	27
85	52.1	78	254	99	38.8	102	40.2	152	28
40	37.2	67	166	53	32.0	55	33.2	111	29
23	45.6	28	101	33	32.5	34	33.4	67	30
8	19.9	33	71	10	14.2	10	14.6	60	31
145	46.3	168	556	204	36.7	214	38.4	343	32
117	46.5	134	461	171	37.0	179	38.8	282	33
29	45.5	34	95	34	35.4	34	36.2	61	34
153	16.6	768	1,462	149	10.2	162	11.1	1,300	35
359	39.4	551	1,555	394	25.3	419	26.9	1,137	36
361	56.8	274	1,096	400	36.5	425	38.7	672	37
250	66.3	127	679	321	47.3	340	50.0	339	38
136	20.8	521	1,099	121	11.0	137	12.4	963	39
232	28.6	579	1,482	250	16.9	270	18.2	1,212	40
147	40.6	215	643	185	28.7	196	30.4	448	41
187	50.1	186	675	255	37.8	268	39.7	407	42
421	65.7	219	892	453	50.8	474	53.1	418	43
996	40.5	1,463	4,317	1,199	27.8	1,271	29.4	3,046	44
128	33.2	257	475	64	13.6	74	15.6	401	45

Table 2B: Union membership and coverage by province and

		Prairies				
		Union member		Union coverage *		Not a union member **
No.		Total	Density	Total	Density	
		'000	'000	%	'000	%
		'000	%	'000	%	'000
1	Total	2,057	554	26.9	608	29.6
	Sector †					
2	Public	491	336	68.4	361	73.5
3	Private	1,566	218	13.9	247	15.8
	Sex					
4	Men	1,068	269	25.2	300	28.1
5	Women	989	285	28.8	308	31.1
	Age					
6	15 to 24	410	45	10.9	50	12.1
7	25 to 54	1,487	459	30.8	503	33.8
8	25 to 44	1,088	309	28.4	339	31.2
9	45 to 54	398	149	37.5	164	41.1
10	55 and over	160	51	31.7	55	34.7
	Education					
11	Less than Grade 9	53	9	17.0	9	17.3
12	Some high school	312	55	17.7	60	19.2
13	High school graduation	459	107	23.3	118	25.6
14	Some postsecondary	227	49	21.4	54	23.7
15	Postsecondary certificate or diploma	669	203	30.3	221	33.1
16	University degree	337	132	39.1	146	43.5
	Work status					
17	Full-time	1,668	469	28.1	515	30.9
18	Part-time	388	85	21.9	92	23.8
	Industry					
19	Goods-producing	475	99	20.9	111	23.4
20	Agriculture	34	1	1.6	1	2.4
21	Natural resources	89	12	12.9	13	14.3
22	Utilities	20	11	57.4	14	69.8
23	Construction	116	24	20.7	26	22.9
24	Manufacturing	216	51	23.8	57	26.3
25	Service-producing	1,582	455	28.8	497	31.4
26	Trade	346	42	12.1	46	13.2
27	Transportation and warehousing	122	51	41.4	55	44.9
28	Finance, insurance, real estate and leasing	114	7	6.5	9	7.9
29	Professional, scientific and technical	87	3	3.6	5	5.4
30	Management, and administrative and support	59	4	6.6	5	8.7
31	Education	171	111	64.6	122	71.2
32	Health care and social assistance	233	124	53.1	131	56.1
33	Information, culture and recreation	91	25	26.9	27	29.6
34	Accommodation and food	152	5	3.1	6	4.1
35	Other	81	5	6.5	6	7.5
36	Public administration	125	79	63.3	85	68.2

selected characteristics, 1999 (continued)

British Columbia						
Total	Union member		Union coverage*		Not a union member**	No.
	Total	Density	Total	Density		
'000	'000	%	'000	%	'000	
1,514	513	33.9	536	35.4	978	1
337	264	78.1	275	81.4	63	2
1,176	250	21.2	261	22.2	915	3
767	270	35.2	282	36.8	485	4
746	243	32.6	254	34.0	493	5
253	32	12.7	36	14.2	217	6
1,134	430	37.9	446	39.4	687	7
804	273	33.9	284	35.3	520	8
329	157	47.6	162	49.3	167	9
127	52	40.5	54	42.2	74	10
27	6	22.6	6	23.2	21	11
179	45	25.5	47	26.4	132	12
360	110	30.5	113	31.5	247	13
178	51	28.6	54	30.2	124	14
490	191	38.9	198	40.5	292	15
280	110	39.4	117	41.8	163	16
1,209	433	35.9	452	37.4	757	17
305	80	26.1	84	27.4	221	18
308	108	34.9	112	36.4	196	19
16	1	7.1	1	7.3	14	20
39	18	46.8	19	48.2	20	21
11	8	72.5	9	75.8	3	22
65	16	24.2	17	25.3	49	23
177	64	36.3	67	37.8	110	24
1,206	406	33.6	424	35.2	782	25
249	41	16.3	42	17.0	207	26
96	54	56.1	56	57.7	41	27
95	12	12.3	13	14.0	82	28
76	3	4.4	4	4.9	72	29
41	5	11.0	5	11.2	37	30
116	81	69.6	86	73.8	30	31
166	104	62.6	106	64.0	60	32
72	21	29.6	22	30.6	50	33
137	14	10.4	15	10.9	122	34
66	7	9.9	7	10.7	59	35
90	64	71.0	68	75.3	22	36

Table 2B: Union membership and coverage by province and

No.	Prairies					
	Total	Union member		Union coverage *		Not a union member **
		Total	Density	Total	Density	
	'000	'000	%	'000	%	'000
Occupation						
1 Management	165	16	9.6	22	13.5	143
2 Business, finance and administrative	384	95	24.8	103	26.8	281
3 Professional	44	8	17.0	8	18.7	36
4 Financial and administrative	118	23	19.6	26	21.7	93
5 Clerical	222	65	29.1	69	31.2	153
6 Natural and applied sciences	126	29	22.6	33	26.0	94
7 Health	116	78	67.6	82	71.1	34
8 Professional	12	6	51.2	7	58.0	5
9 Nursing	39	34	87.8	35	90.2	4
10 Technical	31	19	63.7	21	67.9	10
11 Support staff	35	19	54.0	20	56.8	15
12 Social and public service	156	90	57.6	98	62.9	58
13 Legal, social and religious workers	62	19	31.4	21	34.5	41
14 Teachers and professors	94	70	74.8	77	81.6	17
15 Secondary and elementary	68	59	85.5	62	90.5	6
16 Other	26	12	46.3	15	57.9	11
17 Culture and recreation	35	10	27.4	11	30.9	24
18 Sales and service	559	99	17.7	108	19.3	451
19 Wholesale	51	3	5.5	3	6.5	48
20 Retail	146	18	12.5	19	13.1	127
21 Food and beverage	90	5	5.9	6	6.6	84
22 Protective services	31	14	45.9	16	52.6	15
23 Child care and home support	44	13	29.3	14	32.9	29
24 Travel and accommodation	198	46	23.2	49	24.7	149
25 Trades, transport and equipment operators	321	91	28.2	100	31.1	221
26 Contractors and supervisors	19	5	27.5	6	32.0	13
27 Construction trades	45	10	22.9	11	24.5	34
28 Other trades	117	37	31.7	41	35.0	76
29 Transportation equipment operators	91	26	29.0	29	32.4	61
30 Helpers and labourers	50	12	23.7	12	25.1	37
31 Unique to primary industries	71	7	9.9	8	11.8	63
32 Unique to production	123	40	32.3	42	34.6	80
33 Machine operators and assemblers	101	33	33.0	36	35.6	65
34 Labourers	22	6	29.2	7	30.1	15
Workplace size						
35 Under 20 employees	777	81	10.5	93	11.9	684
36 20 to 99 employees	691	198	28.6	219	31.7	472
37 100 to 500 employees	402	171	42.4	186	46.4	216
38 Over 500 employees	187	104	56.0	110	58.8	77
Job tenure						
39 1 to 12 months	537	76	14.1	87	16.3	449
40 Over 1 year to 5 years	677	127	18.8	142	21.0	535
41 Over 5 years to 9 years	252	70	27.6	77	30.5	175
42 Over 9 years to 14 years	232	96	41.1	102	43.9	130
43 Over 14 years	359	186	51.8	200	55.7	159
Job status						
44 Permanent	1,806	495	27.4	543	30.0	1,263
45 Non-permanent	251	59	23.4	65	26.1	185

Source: Labour Force Survey

* Union members and persons who are not union members, but who are covered by collective agreements (for example, some religious group members).

selected characteristics, 1999 (concluded)

British Columbia						
Total	Union member		Union coverage*		Not a union member**	No.
	Total	Density	Total	Density		
'000	'000	%	'000	%	'000	
126	14	10.8	16	13.1	109	1
294	83	28.3	87	29.7	206	2
35	8	22.0	8	22.8	27	3
91	19	21.1	21	22.9	70	4
167	56	33.5	58	35.0	109	5
95	30	31.7	32	33.4	63	6
79	60	76.0	62	77.7	18	7
8	4	54.7	5	64.6	3	8
30	27	91.9	27	92.5	2	9
20	14	68.5	14	69.4	6	10
21	15	69.2	15	70.1	6	11
111	69	62.5	73	65.7	38	12
45	20	44.8	21	46.9	24	13
66	49	74.6	52	78.7	14	14
47	40	85.0	41	87.4	6	15
19	9	48.7	11	56.9	8	16
37	12	31.2	12	32.9	25	17
430	99	23.0	103	23.9	327	18
37	3	7.8	3	8.0	34	19
112	17	15.1	17	15.3	95	20
74	10	13.4	10	13.6	64	21
23	11	47.0	12	50.9	12	22
33	16	49.6	17	52.6	15	23
150	42	27.8	43	28.8	107	24
217	98	45.3	101	46.4	116	25
11	4	36.7	5	41.0	7	26
30	9	30.0	9	30.3	21	27
77	38	49.8	39	50.2	38	28
59	30	50.9	31	51.9	29	29
39	16	42.0	17	44.6	21	30
39	10	26.6	11	27.3	28	31
86	38	44.1	40	46.2	46	32
66	29	43.0	30	44.8	37	33
20	9	47.8	10	50.9	10	34
625	94	15.1	100	16.0	525	35
514	183	35.7	192	37.4	321	36
263	150	57.1	156	59.2	107	37
112	86	76.5	88	78.3	24	38
339	56	16.7	62	18.2	277	39
502	116	23.2	123	24.5	379	40
230	93	40.2	96	41.7	134	41
195	94	48.3	97	49.6	98	42
249	154	62.0	159	63.9	90	43
1,347	467	34.6	484	36.0	863	44
167	47	27.9	51	30.9	115	45

** Workers who are neither union members nor covered by collective agreements.

† Public sector: employees in government departments or agencies, crown corporations or publicly funded schools, hospitals or other institutions; private sector: all other wage and salary earners.

Table 3: Average earnings and usual hours by union and job status, 1999

	Canada				Atlantic			
	Total	Union member	Union coverage *	Not a union member **	Total	Union member	Union coverage *	Not a union member **
Both sexes								
Average hourly earnings (\$)	16.14	19.07	19.03	14.77	13.23	16.99	16.98	11.52
Full-time employees	17.16	19.43	19.40	15.99	14.04	17.20	17.21	12.39
Part-time employees	11.44	16.66	16.49	9.94	9.16	14.78	14.63	8.04
Average weekly earnings (\$)	595.62	697.84	697.87	547.14	499.85	644.30	644.08	433.97
Full-time employees	680.12	751.57	751.63	643.02	567.43	678.29	679.15	509.28
Part-time employees	205.86	333.78	329.35	169.01	162.73	296.89	292.32	136.14
Average usual weekly hours, main job	35.7	36.3	36.4	35.4	36.7	37.8	37.8	36.1
Full-time employees	39.7	38.8	38.8	40.1	40.5	39.5	39.6	41.0
Part-time employees	17.3	19.6	19.5	16.7	17.3	20.0	19.9	16.8
Men								
Average hourly earnings (\$)	17.77	20.05	20.02	16.65	14.54	17.74	17.76	13.01
Full-time employees	18.57	20.29	20.28	17.65	15.15	17.90	17.93	13.71
Part-time employees	10.50	15.57	15.38	9.47	8.58	13.19	13.13	7.96
Average weekly earnings (\$)	698.53	778.00	778.65	658.76	589.28	713.07	714.07	530.40
Full-time employees	755.55	803.47	804.66	729.23	635.14	729.14	730.82	585.57
Part-time employees	177.54	306.82	301.79	151.39	142.14	246.10	244.14	128.42
Average usual weekly hours, main job	38.5	38.7	38.8	38.4	40.0	40.3	40.3	39.8
Full-time employees	40.9	39.8	39.9	41.5	42.4	41.1	41.1	43.1
Part-time employees	16.2	18.9	18.9	15.7	16.3	18.6	18.5	16.0
Women								
Average hourly earnings (\$)	14.38	17.96	17.88	12.80	11.86	16.16	16.12	9.97
Full-time employees	15.29	18.24	18.17	13.86	12.65	16.34	16.32	10.73
Part-time employees	11.82	16.95	16.80	10.14	9.40	15.16	15.00	8.08
Average weekly earnings (\$)	484.52	606.06	604.79	430.26	405.98	569.36	567.17	334.83
Full-time employees	580.38	679.55	677.88	531.97	482.08	615.27	614.46	412.79
Part-time employees	217.29	341.07	337.00	176.86	170.95	309.17	304.27	139.49
Average usual weekly hours, main job	32.7	33.5	33.6	32.2	33.2	35.1	35.0	32.4
Full-time employees	38.0	37.3	37.4	38.3	38.2	37.7	37.7	38.5
Part-time employees	17.8	19.8	19.7	17.1	17.7	20.3	20.2	17.1

Table 3: Average earnings and usual hours by union and job status, 1999 (continued)

	Quebec				Ontario			
	Total	Union member	Union coverage *	Not a union member **	Total	Union member	Union coverage *	Not a union member **
Both sexes								
Average hourly earnings (\$)	15.70	18.42	18.23	14.04	16.98	19.92	19.97	15.81
Full-time employees	16.43	18.54	18.36	15.07	18.18	20.43	20.49	17.18
Part-time employees	12.08	17.61	17.35	9.86	11.27	15.98	15.84	10.26
Average weekly earnings (\$)	565.83	656.77	653.26	508.74	633.05	743.79	746.56	588.77
Full-time employees	634.49	699.21	694.76	591.71	724.39	798.98	802.25	690.81
Part-time employees	227.64	374.66	366.77	169.10	199.04	310.59	308.11	174.79
Average usual weekly hours, main job	35.2	35.6	35.8	34.8	35.9	37.0	37.0	35.5
Full-time employees	38.7	37.9	38.0	39.2	39.9	39.2	39.3	40.2
Part-time employees	17.9	20.6	20.5	16.9	17.1	19.1	19.1	16.6
Men								
Average hourly earnings (\$)	17.04	19.10	18.97	15.68	18.72	20.91	20.98	17.78
Full-time employees	17.64	19.25	19.13	16.51	19.64	21.18	21.27	18.89
Part-time employees	11.39	16.67	16.41	9.73	10.28	14.74	14.49	9.66
Average weekly earnings (\$)	653.08	722.89	720.40	605.68	738.88	821.23	825.04	702.89
Full-time employees	700.20	745.14	742.97	667.86	800.84	845.21	849.86	778.54
Part-time employees	204.59	356.54	347.53	157.43	167.70	274.60	269.51	152.65
Average usual weekly hours, main job	37.8	37.9	38.0	37.6	38.5	39.2	39.2	38.3
Full-time employees	40.0	39.0	39.1	40.6	41.0	40.1	40.2	41.4
Part-time employees	17.0	20.4	20.2	16.0	15.8	18.1	18.1	15.5
Women								
Average hourly earnings (\$)	14.17	17.57	17.30	12.30	15.11	18.75	18.76	13.78
Full-time employees	14.78	17.48	17.21	13.20	16.28	19.36	19.39	15.03
Part-time employees	12.37	17.92	17.66	9.92	11.68	16.30	16.20	10.53
Average weekly earnings (\$)	466.85	574.17	569.23	405.56	519.76	651.54	653.32	471.47
Full-time employees	544.26	629.63	622.41	493.45	625.26	733.24	734.91	581.19
Part-time employees	237.50	380.49	373.21	174.58	211.90	319.71	318.13	184.73
Average usual weekly hours, main job	32.3	32.8	33.0	31.8	33.1	34.3	34.4	32.7
Full-time employees	37.0	36.3	36.4	37.4	38.5	38.0	38.0	38.6
Part-time employees	18.3	20.7	20.6	17.3	17.6	19.4	19.4	17.1

Table 3: Average earnings and usual hours by union and job status, 1999 (concluded)

	Prairies				British Columbia			
	Total	Union member	Union coverage *	Not a union member **	Total	Union member	Union coverage *	Not a union member **
Both sexes								
Average hourly earnings (\$)	15.19	17.86	17.91	14.05	17.26	20.62	20.61	15.42
Full-time employees	16.24	18.32	18.38	15.28	18.34	21.06	21.09	16.70
Part-time employees	10.67	15.33	15.29	9.23	12.96	18.24	18.06	11.03
Average weekly earnings (\$)	567.95	651.81	656.61	530.75	625.22	741.75	743.13	560.62
Full-time employees	655.79	715.50	720.76	626.74	724.87	813.22	816.06	670.37
Part-time employees	190.59	301.49	299.03	156.69	230.04	352.97	348.58	185.25
Average usual weekly hours, main job	36.0	36.0	36.2	35.9	34.9	35.5	35.6	34.6
Full-time employees	40.4	39.1	39.2	40.9	39.5	38.6	38.7	39.9
Part-time employees	17.3	19.4	19.3	16.7	17.1	18.8	18.7	16.5
Men								
Average hourly earnings (\$)	17.11	19.27	19.32	16.25	18.90	21.73	21.73	17.24
Full-time employees	17.94	19.63	19.69	17.22	19.80	22.02	22.03	18.39
Part-time employees	9.48	13.56	13.50	8.65	11.76	17.45	17.38	10.28
Average weekly earnings (\$)	688.09	754.14	759.94	660.00	735.14	838.13	839.83	674.26
Full-time employees	745.29	785.94	791.83	726.00	803.37	872.00	874.45	758.29
Part-time employees	159.86	256.41	253.73	140.58	198.31	331.84	330.32	163.75
Average usual weekly hours, main job	39.3	38.8	39.1	39.4	37.8	38.3	38.4	37.5
Full-time employees	41.8	40.2	40.4	42.4	40.6	39.6	39.7	41.2
Part-time employees	16.2	18.4	18.3	15.8	16.1	18.2	18.2	15.5
Women								
Average hourly earnings (\$)	13.11	16.53	16.54	11.57	15.57	19.39	19.37	13.62
Full-time employees	13.92	16.78	16.80	12.50	16.46	19.71	19.76	14.63
Part-time employees	11.11	15.74	15.72	9.47	13.44	18.45	18.24	11.37
Average weekly earnings (\$)	438.30	555.36	555.95	385.11	512.25	634.88	635.59	448.75
Full-time employees	533.53	633.15	634.76	483.49	623.70	730.89	734.03	562.69
Part-time employees	201.87	312.02	309.81	163.36	242.62	358.67	353.57	194.91
Average usual weekly hours, main job	32.4	33.4	33.4	32.0	32.0	32.4	32.4	31.7
Full-time employees	38.4	37.8	37.8	38.6	38.0	37.1	37.2	38.4
Part-time employees	17.7	19.6	19.5	17.0	17.5	19.0	18.9	16.9

Source: Labour Force Survey

* Union members and persons who are not union members, but who are covered by collective agreements (for example, some religious group members).

** Workers who are neither union members nor covered by collective agreements.

Table 4: Wage settlements, inflation and labour disputes

Year	Major wage settlements and inflation rates *				Strikes and lockouts, workers involved, and person-days and working time lost **			
	Average annual percentage increase in base wage rates							
	Public sector †	Private sector †	Both sectors	Annual change in Consumer Price Index	Strikes & lockouts	Workers involved	Person-days not worked	Percentage of estimated working time
	%	%	%			'000	'000	%
1980	10.9	11.7	11.1	10.2	1,028	439	9,130	0.37
1981	13.1	12.6	13.0	12.4	1,049	341	8,850	0.35
1982	10.4	9.5	10.2	10.9	679	464	5,702	0.23
1983	4.6	5.5	4.8	5.7	645	329	4,441	0.18
1984	3.9	3.2	3.6	4.4	716	187	3,883	0.15
1985	3.8	3.3	3.7	3.9	829	162	3,126	0.12
1986	3.6	3.0	3.4	4.2	748	484	7,151	0.27
1987	4.1	3.8	4.0	4.4	668	582	3,810	0.14
1988	4.0	5.0	4.4	4.0	548	207	4,901	0.17
1989	5.2	5.2	5.2	5.0	627	445	3,701	0.13
1990	5.6	5.7	5.6	4.8	579	270	5,079	0.17
1991	3.4	4.4	3.6	5.6	463	253	2,516	0.09
1992	2.0	2.5	2.1	1.5	404	150	2,110	0.07
1993	0.6	0.8	0.6	1.9	381	102	1,517	0.05
1994	-	1.2	0.3	0.2	374	81	1,607	0.06
1995	0.6	1.4	0.9	2.2	328	149	1,583	0.05
1996	0.5	1.7	0.9	1.6	330	282	3,352	0.11
1997	1.1	1.8	1.5	1.6	284	258	3,610	0.12
1998	1.6	1.8	1.7	1.0	381	244	2,444	0.08
1999	1.9	2.6	2.2	1.7	413	159	2,446	0.08
2000	2.3	2.8	2.3	2.5	141	60	376	0.05

Sources: Statistics Canada, Prices Division; Human Resources Development Canada, Workplace Information Directorate

Note: Major wage settlements refer to agreements involving 500 or more employees.

* 2000 data refer to January to April only.

** 2000 data refer to January to March only.

† Public sector employees are those working for government departments or agencies, crown corporations or publicly funded schools, hospitals or other institutions. Private sector employees are all other wage and salary earners.

Data sources

Information on union membership, density and coverage by various socio-demographic characteristics, including earnings, are from the redesigned Labour Force Survey (LFS), which came into effect January 1997. Further details on LFS-based union statistics can be obtained from Marc Lévesque, Labour Statistics Division, Statistics Canada at (613) 951-2793.

Data on strikes, lockouts and workdays lost, and those on major wage settlements were supplied by Human Resources Development Canada. Further information on these statistics may be obtained from Angèle Charbonneau, Workplace Information Directorate, HRDC at 1 800 567-6866.

Rural roots

Richard Dupuy, Francine Mayer and René Morissette

For some time, concerns have been raised about the movement of young people away from rural communities. There is a sense that most rural areas offer few employment opportunities for young people, requiring them to leave for urban centres to find work. Until recently, however, relatively little was known about migration patterns in rural and urban areas in Canada.¹ This article fills this gap by providing information on the extent to which young people stay, leave or return to rural communities (see *Data sources and definitions*).

Labour market tougher in rural areas

Many factors, such as the desire to gain independence, the wish to fulfill one's aspirations or to "discover the world" and the need to pursue postsecondary education, may underlie the decision to migrate from a rural area to an urban one. The notion that labour market conditions are less favourable in rural areas is also cited as a factor. Some who are unemployed move to cities to find employment, while some who already have a job may leave to find one offering better wages, job stability or opportunities.

Labour market conditions are indeed less favourable in rural areas. The unemployment rate of people aged 15 to 29 who were not full-time students was 16.8% in 1996 in rural areas, compared with only 11.9% in urban areas (Table 1). Rural unemployment rates also differ considerably by province. The unemployment rate of young rural people who were not

Table 1: Labour market indicators in rural and urban areas, persons aged 15 to 29*

	Unemployment rate, 1996**	Full-year full-time employment, 1995†
	%	
Canada		
Rural	16.8	39.0
Urban	11.9	48.8
Newfoundland		
Rural	40.0	21.7
Urban	18.5	41.8
Prince Edward Island		
Rural	18.2	25.5
Urban	13.7	42.2
Nova Scotia		
Rural	21.7	32.9
Urban	14.4	44.3
New Brunswick		
Rural	24.3	30.7
Urban	13.9	43.7
Quebec		
Rural	17.4	40.8
Urban	13.6	48.7
Ontario		
Rural	13.6	44.6
Urban	11.6	51.6
Manitoba		
Rural	13.6	42.5
Urban	10.0	49.6
Saskatchewan		
Rural	12.3	40.8
Urban	10.6	45.7
Alberta		
Rural	10.5	41.6
Urban	9.1	47.9
British Columbia		
Rural	16.2	33.2
Urban	11.7	45.1
Yukon		
Rural	18.2	28.5
Urban	11.8	42.8
Northwest Territories		
Rural	24.1	34.7
Urban	8.9	54.4

Source: Census of Canada, 1996

* Those who were not full-time students.

** As of May 1996.

† Percentage of workers who were employed full year full time in 1995.

Based on the analytical report Rural Youth: Stayers, Leavers and Return Migrants. This report is available through the Rural Secretariat of Agriculture and Agri-Food Canada (contact Ling Lee at (613) 759-7040) and through Statistics Canada (Catalogue no. 11F0019MPE). Richard Dupuy and René Morissette are with the Business and Labour Market Analysis Division of Statistics Canada. Francine Mayer is with the Health Statistics Division. They can be reached at (613) 951-3611, (613) 951-3608 and (613) 951-4536, respectively, or dupuy@statcan.ca, moriren@statcan.ca and mayefra@statcan.ca.

Data sources and definitions

The data used in this article come from the 1996 Census, T1 tax records and the Survey of Labour and Income Dynamics. The census asks the following question: "Where did [you] live five years ago?" This makes it possible to determine the location of persons in both 1991 and 1996 and, as a result, to separate those who had moved from those who had not.

Because they cover the 1980s as well as the 1990s, longitudinal data sets based on T1 tax records allow examination of five-year migration patterns as well as return migration. Five-year migration patterns are used to compare results from tax data with those from the census. Eleven-year migration patterns are used to analyze return migration. Longitudinal data from T1 tax records provide information on annual earnings before and after migration, allowing a comparison of earnings growth of leavers with that of stayers. Census data do not have information on annual earnings before migration.

The Survey of Labour and Income Dynamics (SLID) is the only Canadian data set that allows an examination of workers' education level, occupation and industry of employment both before and after a move from one area to another. As well, SLID—as do T1 tax records—allows an analysis of the earnings growth of leavers and stayers.

An **urban** area is a geographical unit belonging to either a census metropolitan area (CMA) or a census agglomeration (CA). A CMA consists of an urbanized core having a population of at least 100,000 people, while a CA consists of an urbanized core of 10,000 to 100,000 persons. **Rural** areas and small towns are defined residually as geographical

units that are in neither a CMA nor a CA. A "rural area" is a rural community or small town.

Migration patterns in this study are analyzed at the subprovincial level. More precisely, migration flows are analyzed using geographical units defined jointly in terms of economic region and rural/urban status. In 1996, the Labour Force Survey defined 74 economic regions in Canada, 62 of which had both a rural and an urban component. For instance, Cape Breton rural and Cape Breton urban are two distinct geographical units belonging to the economic region of Cape Breton. In total, 136 geographical units ($62 \times 2 = 124$, plus $74 - 62 = 12$) can be considered.

In this study, a **leaver** is defined as a person who was in a given geographical unit in 1991 but not in 1996. Otherwise, a person is defined as a **stayer**. For instance, someone living in Prince Albert rural in 1991 and outside Prince Albert rural in 1996 is a leaver, whether the destination area is Prince Albert urban or any other geographical unit. However, a person moving to a different location within Prince Albert rural between 1991 and 1996 is a stayer.

For the 1987-to-1997 period, T1 tax records define a **permanent stayer** as a person who was in the same geographical unit for all 11 years. A **return migrant** is someone who changed geographical units at some point during the period but whose geographical unit in 1997 was the same as that in 1987. A **permanent leaver** is a person who changed geographical units at some point during the period and whose geographical unit in 1997 was different from that in 1987.

full-time students reached a maximum of 40.0% in Newfoundland and a minimum of 10.5% in Alberta. Undoubtedly, these differences in unemployment have an effect on the migration flows in and out of these provinces.

Not only is the percentage of persons having a job lower in rural areas, the percentage of workers employed full year full time is also lower. For instance, in 1995 the full-year full-time employment rate of youths was 39.0% in rural areas, compared with 48.8% in urban areas. This rural rate was lowest in

Newfoundland (21.7%) and highest in Ontario (44.6%).

Roughly 30% of teenagers leave rural communities

During the 1991-to-1996 period, roughly 30% of teenagers (aged 15 to 19) left their rural communities, compared with at most 18% of their urban counterparts (Table 2). One reason for the difference is the absence of postsecondary institutions in rural areas; teenagers there must move if they want to pursue further education.

In both rural and urban areas, the percentage of leavers generally declines with age. For instance, at most 14% of people aged 30 to 44 left rural communities during the 1991-to-1996 period, compared with less than 10% of those 55 or older. The degree of mobility falls with age partly because the incentives for leaving are greater the younger one is. For youths, the costs of moving (pecuniary as well as non-pecuniary) will probably be lower and the expected benefits higher (since these benefits can be reaped over a longer period).

Table 2: Leavers by age, 1991 to 1996

Age in 1991	Census	Tax data
%		
15 to 19		
Rural	28.0	31.8
Urban	15.3	17.8
20 to 24		
Rural	24.5	31.8
Urban	21.7	23.3
25 to 29		
Rural	17.5	21.7
Urban	16.9	19.0
30 to 44		
Rural	11.2	13.8
Urban	10.0	11.3
45 to 54		
Rural	7.3	9.5
Urban	6.8	8.0
55 to 64		
Rural	6.3	8.9
Urban	6.2	7.6
65 and over		
Rural	5.8	10.0
Urban	4.0	6.5

Sources: Census of Canada, 1996;
T1 tax records

Between 18% and 22% of persons aged 25 to 29 moved out of their rural areas in the first half of the 1990s. Outflow rates of their urban counterparts were similar (17% to 19%), showing that leaving home is a phenomenon not limited to rural communities.

While teenagers left rural areas more often than urban ones in virtually all provinces, the same was not true for persons in their late twenties (Table 3). Contrary to expectation, in all of the Atlantic provinces, as well as in Quebec and Saskatchewan, those aged 25 to 29 left rural areas less often than urban areas.

Destination of leavers

Where do leavers of rural communities go? In all provinces except Newfoundland, their main destination is an urban area within the

province of origin (Chart).² In contrast, young people who leave rural communities in Newfoundland tend to go mainly to an urban area outside the province.

Table 3: Young leavers by province, 1991 to 1996

	Age in 1991					
	15 to 19		20 to 24		25 to 29	
	Census	Tax data	Census	Tax data	Census	Tax data
%						
Canada						
Rural	28.0	31.8	24.5	31.8	17.5	21.7
Urban	15.3	17.8	21.7	23.3	16.9	19.0
Newfoundland						
Rural	29.5	32.2	23.5	28.5	14.3	16.8
Urban	20.6	25.8	29.5	29.2	19.5	19.1
Prince Edward Island						
Rural	20.1	23.1	17.9	23.9	11.2	12.6
Urban	15.8	20.6	26.0	27.3	17.4	18.4
Nova Scotia						
Rural	21.9	26.9	22.6	26.0	12.8	17.4
Urban	17.7	21.7	27.3	27.3	20.3	19.9
New Brunswick						
Rural	19.9	22.8	19.9	23.8	13.8	16.5
Urban	19.7	23.2	27.2	27.8	16.4	18.4
Quebec						
Rural	24.4	28.3	20.8	28.8	14.3	18.7
Urban	17.0	20.8	24.6	27.9	19.3	22.7
Ontario						
Rural	27.2	31.7	27.2	35.6	19.6	24.3
Urban	12.2	13.7	18.4	19.2	13.9	15.9
Manitoba						
Rural	30.7	34.3	22.2	32.1	18.3	22.0
Urban	16.1	21.7	22.9	26.0	19.8	21.6
Saskatchewan						
Rural	39.6	42.1	26.7	37.9	18.6	23.7
Urban	27.2	31.2	34.0	34.7	24.5	25.4
Alberta						
Rural	34.7	37.9	31.0	36.7	22.4	27.4
Urban	19.6	22.1	25.8	26.4	21.0	22.0
British Columbia						
Rural	33.2	40.0	28.3	38.0	22.8	28.4
Urban	13.7	15.5	17.8	18.9	15.4	16.5
Yukon						
Rural	35.1	36.0	43.8	43.2	36.9	39.5
Urban	29.6	31.3	32.8	35.8	33.8	29.2
Northwest Territories						
Rural	8.0	15.8	14.2	16.5	20.5	22.2
Urban	34.8	39.0	42.3	43.6	40.2	40.3

Sources: Census of Canada, 1996; T1 tax records

Chart: In all provinces except Newfoundland, rural leavers are more likely to go to an urban area within their province.



Source: Census of Canada, 1996

In Nova Scotia and New Brunswick, urban areas outside the province represent an important second destination: they accounted for at least one-third of flows out of rural communities between 1991 and 1996. Conversely, very few rural residents leave the two largest provinces, Ontario and Quebec. This reflects at least two factors. First, linguistic differences present disincentives to move out of Quebec. Second, in both of these provinces the labour market is relatively large, providing more job opportunities for rural leavers, thus limiting the need to move outside the province.

In Manitoba, Saskatchewan and Alberta, at least 20% of people aged 25 to 29 who left rural areas in the early 1990s went to another rural community inside the province. At least in Saskatchewan, this pattern may be related to the importance of agriculture in the provincial economy.

Flows of in-migrants vary

Among teenagers, the percentage of in-migrants is smaller in rural areas than it is in urban areas for most provinces (Table 4). Since the percentage of leavers is generally higher in rural areas among this group, net flows of teenagers are also smaller in rural areas in most provinces.

Sometimes, however, flows of newcomers are greater in rural areas. This is the case in Ontario, Manitoba, Alberta and British Columbia for those aged 20 to 24 and 25 to 29. The percentage of rural in-migrants was particularly high in British Columbia between 1991 and 1996, ranging from 44% to 57%, depending on the age group and data set considered. For

each of the two age groups, the opposite pattern was found in Newfoundland, Prince Edward Island and New Brunswick. Thus, while it is not always true to say that

proportionally more people leave rural than urban areas, neither is it always true to conclude that proportionally fewer people enter rural communities.

Table 4: Newcomers by province, 1991 to 1996

	Age in 1991					
	15 to 19		20 to 24		25 to 29	
	Census	Tax data	Census	Tax data	Census	Tax data
	%					
Canada						
Rural	15.4	20.0	30.9	29.4	24.6	26.6
Urban	19.0	21.2	20.3	23.9	15.2	17.7
Newfoundland						
Rural	5.4	7.0	14.6	12.4	10.1	10.9
Urban	18.7	16.8	17.5	22.1	14.7	15.9
Prince Edward Island						
Rural	11.3	11.2	18.1	16.3	13.0	15.8
Urban	21.4	22.2	22.1	26.3	16.9	19.8
Nova Scotia						
Rural	9.2	10.7	20.8	19.3	17.6	19.7
Urban	21.2	25.2	20.3	23.8	15.6	17.6
New Brunswick						
Rural	9.5	11.4	17.9	17.7	14.3	16.1
Urban	20.4	21.9	23.5	25.7	17.3	18.8
Quebec						
Rural	13.6	18.3	26.9	25.5	19.9	21.8
Urban	19.6	22.7	21.9	27.3	17.2	21.3
Ontario						
Rural	14.9	19.4	33.7	34.1	28.8	32.3
Urban	13.7	15.4	16.3	18.4	11.3	13.2
Manitoba						
Rural	14.8	19.9	27.5	29.0	23.9	26.3
Urban	19.5	20.9	14.2	19.1	13.5	15.0
Saskatchewan						
Rural	16.0	20.9	33.8	27.5	23.4	22.5
Urban	32.1	27.9	24.9	28.6	18.0	20.3
Alberta						
Rural	24.8	33.3	43.4	41.9	32.1	34.9
Urban	27.6	31.2	23.9	28.5	17.7	20.2
British Columbia						
Rural	30.1	37.9	57.3	55.6	44.1	49.4
Urban	24.5	29.7	27.9	32.1	22.0	23.4
Yukon						
Rural	48.8	58.1	42.1	61.1	40.3	45.2
Urban	33.6	35.6	56.0	57.7	33.8	42.2
Northwest Territories						
Rural	15.9	29.6	22.7	28.7	19.3	24.4
Urban	56.0	58.2	63.9	80.0	40.7	46.5

Sources: Census of Canada, 1996; T1 tax records

Rural areas not always net losers of young people

Considering only those persons identified in both years, rural communities lost 12% to 13% of their teenage population between 1991 and 1996 (Table 5). Rural communities were not net losers of all young age groups, however. Over the same period, in the absence of deaths and international migration, they would have enjoyed a net gain of 5% to 7% in their population aged 25 to 29.

Table 5: Net migration flows by age, 1991 to 1996

Age in 1991	Census	Tax data
	%	
15 and over		
Rural	2.0	1.6
Urban	-0.6	-0.4
15 to 29		
Rural	0.2	-0.9
Urban	-0.04	0.2
15 to 19		
Rural	-12.6	-11.8
Urban	3.7	3.5
20 to 24		
Rural	6.4	-2.4
Urban	-1.4	0.6
25 to 29		
Rural	7.0	4.9
Urban	-1.7	-1.3
30 to 44		
Rural	2.8	2.4
Urban	-0.7	-0.7
45 to 54		
Rural	4.6	5.1
Urban	-1.3	-1.4
55 to 64		
Rural	4.0	4.8
Urban	-1.2	-1.3
65 and over		
Rural	-1.0	-1.8
Urban	0.3	0.6

Sources: *Census of Canada, 1996;*
T1 tax records

Rural communities also experienced net gains among 30-to-64 year-olds, while urban communities experienced corresponding net losses. Had there been no deaths or international migration, rural communities would have experienced a net gain of about 2% in their population aged 15 and over. Urban communities would have experienced a net loss of about 0.5%.

All provinces saw a net loss of teenagers from their rural communities in the early 1990s, particularly Saskatchewan and Newfoundland (21% to 25%) (Table 6). Net gains of those aged 25 to 29 were observed in most provinces, with British Columbia experiencing the greatest growth in the number of those in their late twenties (21%).

Net gains of rural 30-to-64 year-olds occurred in all provinces except Newfoundland and Saskatchewan. These were more moderate in the Atlantic provinces, Quebec, Manitoba and Alberta than in Ontario or British Columbia. Had there been no deaths or international migration, rural areas would have experienced net growth of their population aged 15 and over in Quebec, Ontario, Alberta and British Columbia. Because rural areas of several provinces experience net losses of their youngest residents (aged 15 to 19) and net gains of older persons, the aging of the population will be faster there than in many urban communities.

Return migration is limited

Migration is not always a one-step process. People who leave rural communities to pursue post-secondary education may return to work in their area of origin. Others

may choose to stay in urban areas and not return.

Over the 1987-to-1997 period, 44% of teenagers stayed in their rural community (Table 7). Another 12% left at some point during the period and returned by 1997. The remaining 44% left and did not return. This implies that 56% of teenagers were in their original rural community 10 years later. The corresponding percentages for persons aged 20 to 24 and 25 to 29 were 64% and 74%.

To what extent do those who leave their rural community return to it? For all three age groups, only 20% to 22% of leavers were back in their rural community by 1997. The implication of this is clear: return migration will probably have a fairly limited effect on the size of a given cohort. Rather, it appears that rural areas must rely on inflows from other (primarily urban) areas to maintain a given population.

Earnings growth of stayers, leavers and return migrants

One reason people change location is to improve their earnings prospects. By moving to a new area, they may find a better match between their skills and job requirements, earn higher wages and enjoy faster earnings growth than their counterparts who stayed. Is earnings growth really greater for rural leavers than for rural stayers?

The answer is a qualified yes. Whether one measures earnings growth by examining the median change in earnings or the median percentage change in earnings, persons who leave rural areas experience greater earnings growth than those who stay. For example, tax

Table 6: Net migration flows by age and province, 1991 to 1996

		Newfoundland		Prince Edward Island		Nova Scotia		New Brunswick		Quebec		Ontario	
Age in 1991		Census	Tax data	Census	Tax data	Census	Tax data	Census	Tax data	Census	Tax data	Census	Tax data
%													
15+	Rural	-5.4	-5.7	1.0	-0.1	0.5	-0.5	-0.8	-0.9	1.4	0.7	3.2	3.0
	Urban	-3.4	-2.8	1.4	1.9	-1.5	-0.6	-0.1	-0.3	-1.1	-0.9	-1.2	-1.2
15-29	Rural	-13.2	-13.7	-2.2	-4.0	-3.2	-4.6	-3.9	-4.6	0.5	-1.4	1.1	0.4
	Urban	-6.3	-5.8	0.3	0.5	-3.1	-1.8	-0.7	-0.9	-1.0	-0.6	-1.3	-1.2
15-19	Rural	-24.1	-25.1	-8.8	-11.9	-12.7	-16.2	-10.4	-11.4	-10.8	-10.0	-12.3	-12.3
	Urban	-1.9	-9.0	5.6	1.5	3.5	3.5	0.7	-1.2	2.5	1.9	1.6	1.7
20-24	Rural	-8.9	-16.1	0.2	-7.6	-1.9	-6.8	-2.0	-6.0	6.1	-3.3	6.4	-1.6
	Urban	-12.0	-7.1	-3.9	-1.0	-7.0	-3.5	-3.8	-2.2	-2.7	-0.6	-2.1	-0.8
25-29	Rural	-4.2	-5.8	1.9	3.2	4.8	2.3	0.4	-0.4	5.6	3.1	9.2	8.0
	Urban	-4.8	-3.2	-0.5	1.4	-4.7	-2.3	0.9	0.4	-2.2	-1.4	-2.6	-2.7
30-44	Rural	-2.7	-3.1	3.7	2.1	1.9	0.6	0.3	0.2	1.7	1.3	3.6	3.4
	Urban	-1.8	-1.7	1.9	1.8	-1.9	-0.5	0.6	0.2	-1.1	-0.9	-1.2	-1.3
45-54	Rural	-0.2	-0.3	3.2	3.7	3.8	3.2	1.9	2.2	3.7	4.3	6.6	7.2
	Urban	-2.9	-2.2	2.4	3.3	-0.1	-	-1.0	-0.7	-1.5	-1.6	-1.8	-1.8
55-64	Rural	1.6	1.2	3.8	2.4	2.5	2.9	1.7	2.4	2.5	3.1	6.8	7.5
	Urban	-2.6	-2.0	2.3	2.7	0.6	0.4	-	-0.8	-1.5	-1.6	-1.7	-1.7
65+	Rural	-1.4	-2.1	-2.9	-3.5	-0.1	-1.5	-0.6	-0.9	-1.7	-3.2	-1.1	-1.3
	Urban	0.7	2.1	1.2	3.6	0.7	1.0	0.6	0.6	-0.3	-0.1	0.2	0.3
%													
		Manitoba		Saskatchewan		Alberta		British Columbia		Yukon		Northwest Territories	
Age in 1991		Census	Tax data	Census	Tax data	Census	Tax data	Census	Tax data	Census	Tax data	Census	Tax data
%													
15+	Rural	-	0.6	-2.0	-3.1	3.3	3.5	11.4	11.8	0.5	4.6	-0.4	0.6
	Urban	-3.0	-3.9	-2.5	-3.1	-0.8	-0.3	4.0	4.3	3.1	3.8	1.3	4.6
15-29	Rural	-2.4	-2.3	-5.6	-8.2	3.8	4.4	15.2	15.3	4.3	12.3	4.7	7.8
	Urban	-4.2	-5.6	-3.9	-5.2	0.3	1.4	8.9	10.5	7.8	14.4	12.1	18.7
15-19	Rural	-15.8	-14.4	-23.5	-21.2	-9.9	-4.7	-3.1	-2.1	13.7	13.9	7.9	22.0
	Urban	3.4	-0.8	4.9	-3.2	8.0	9.1	10.7	14.2	4.0	19.2	21.2	4.3
20-24	Rural	5.3	-3.1	7.1	-10.5	12.4	5.2	29.0	17.6	-1.7	12.2	8.4	17.9
	Urban	-8.6	-6.8	-9.1	-6.1	-1.9	2.0	10.2	13.2	23.2	36.4	21.6	21.9
25-29	Rural	5.6	4.2	4.9	-1.2	9.7	7.4	21.3	21.0	3.4	2.2	-1.3	5.6
	Urban	-6.3	-6.5	-6.5	-5.2	-3.3	-1.8	6.5	6.9	-	6.2	0.4	13.0
30-44	Rural	1.4	2.4	-0.3	-1.1	3.9	3.9	11.2	11.6	0.5	-3.7	-4.4	3.4
	Urban	-2.8	-3.8	-3.2	-3.4	-1.9	-1.4	3.2	3.6	2.9	0.2	-1.3	2.4
45-54	Rural	2.4	4.2	0.6	0.5	4.0	4.3	12.4	14.6	-2.3	-2.9	-3.2	1.5
	Urban	-3.2	-4.2	-2.2	-2.8	-2.1	-2.0	1.5	1.5	-1.3	-9.3	-13.2	-5.6
55-64	Rural	1.7	3.2	-0.5	-0.8	2.0	3.3	12.4	14.4	-8.8	-10.4	-9.6	-10.2
	Urban	-2.8	-3.7	-1.1	-1.9	-1.2	-1.3	0.6	0.8	-5.9	-28.2	-29.2	-10.6
65+	Rural	-1.6	-2.7	-2.9	-4.3	-	-0.3	2.1	1.5	-1.7	-0.7	-0.9	-7.1
	Urban	0.1	-0.4	2.0	1.2	1.7	2.7	0.8	1.1	-4.7	3.6	-9.5	1.1

Sources: Census of Canada, 1996; T1 tax records

Table 7: Return migration, 1987 to 1997

	Stayers*	Leavers		Return rate
		Returned**	Permanent†	
%				
Age in 1987				
15 to 19				
Rural	43.8	12.3	43.9	21.9
Urban	62.2	9.0	28.7	23.9
20 to 24				
Rural	54.4	9.9	35.8	21.6
Urban	61.7	8.2	30.1	21.3
25 to 29				
Rural	68.0	6.4	25.6	20.0
Urban	70.2	5.5	24.4	18.3

Source: T1 tax records

* In the same geographical unit for all 11 years.

** Changed geographical unit at some point during the period but 1997 location is the same as 1987 location.

† 1997 location is different from 1987 location.

data show that persons aged 25 to 29 in 1993 who left their rural community saw their earnings increase by 22% (or \$4,400) between 1993 and 1997, compared

with only 16% (or \$2,900) for their counterparts who stayed in the community (Table 8).

While it seems reasonable to think that the greater earnings growth results from migration itself, this is not necessarily the case. It could occur if rural leavers have better earnings growth potential than rural stayers. Some leavers could simply be "on a fast track" (in terms of earnings progression). Disentangling these two effects is beyond the scope of this study.

Persons who return to their rural community may be those for whom migration was a mistake: perhaps they did not find the jobs they were hoping to find. In contrast, people who left and did not return may have been successful economically; that is, they may have found a good job with desirable working conditions. If so, the earnings growth of return migrants should be lower than that of leavers who did not return.

The evidence is consistent with this view.³ For all three age groups, the earnings growth of return migrants is much less than that of leavers who did not return (Table 9). For instance, persons aged 20 to 24 in 1987 who had migrated and returned to their rural community by 1997 saw their earnings increase by about \$7,700 (in 1992 dollars) between 1987 and 1997, compared with roughly \$13,400 for their counterparts

Table 8: Median real earnings* growth, stayers and leavers, 1993 to 1997

	Age in 1993					
	15 to 19		20 to 24		25 to 29	
	\$	%	\$	%	\$	%
Survey of Labour and Income Dynamics						
Rural						
Stayers**	4,600	160	5,500	53	3,200	17
Leavers†	7,000	272	8,800	108	6,600	21
Urban						
Stayers**	5,900	211	7,100	64	4,400	20
Leavers†	6,500	195	7,100	83	7,900	33
T1 tax file records						
Rural						
Stayers**	6,000	162	5,000	51	2,900	16
Leavers†	7,700	211	9,000	108	4,400	22
Urban						
Stayers**	6,000	157	6,800	66	4,200	19
Leavers†	6,300	161	8,400	93	4,800	23

Sources: Survey of Labour and Income Dynamics; T1 tax records

* 1992 dollars.

** In the same geographical unit for all 5 years.

† 1997 location is different from 1993 location.

Table 9: Median real earnings* growth, 1987 to 1997

	Age in 1987					
	15 to 19		20 to 24		25 to 29	
	\$	%	\$	%	\$	%
Rural						
Stayers**	13,000	297	6,400	53	4,700	26
Leavers						
Returned†	13,000	314	7,700	74	4,200	26
Permanent††	19,200	495	13,400	124	7,000	38
Urban						
Stayers**	18,500	385	11,500	79	7,100	31
Leavers						
Returned†	15,500	337	10,700	86	6,600	33
Permanent††	18,700	412	13,300	106	7,300	34

Source: T1 tax records

* 1992 dollars

** In the same geographical unit for all 11 years.

† Changed geographical unit at some point during the period but 1997 location is the same as 1987 location.

†† 1997 location is different from 1987 location.

who had not returned. This pattern is observed in all provinces. It suggests that while return migration may be positive from a community's point of view (as it helps maintain the population size of a given cohort), it may have been triggered by a negative labour market experience for some who decided to come back.

Summary

During the 1991-to-1996 period, migration patterns in rural areas varied markedly across provinces. At one end of the spectrum, rural areas were booming in British Columbia, showing net gains of 15-to-29 year-olds (about 15%). On the other hand, rural areas faced serious problems in Newfoundland, experiencing net losses of almost 15% of their youth population. Such areas in other Atlantic provinces, in Manitoba and Saskatchewan had more moderate losses. In Quebec and Ontario, net flows of rural youths were close to zero. Finally, Alberta enjoyed moderate net gains in its rural population aged 15 to 29.

Even within provinces, migration patterns varied substantially across economic regions. In Quebec, for example, rural areas in Lanaudière faced much more optimistic prospects than did those in Côte Nord or Gaspésie-Îles-de-la-Madeleine. Similarly, rural areas in Kitchener-Waterloo-Barrie fared much better in the first half of the 1990s than rural areas in northeastern Ontario.

Interprovincial differences in unemployment are probably a major factor underlying net migration flows. Among persons aged 15 to 29 in 1996 who were not full-time students, the unemployment rate in rural areas averaged 27% in the Atlantic provinces, compared with only 11% and 16% in Alberta and British Columbia.

Because migration is not a one-step process, it is crucial to examine how many people return to their rural community after having left. If a substantial proportion of leavers were to do so, one could count on return migration as a means of maintaining the population of a given cohort in an area. The numbers presented in this study indicate that such thinking is not justified. Only one leaver in five will return to his or her rural community 10 years later. This suggests that rural areas must rely on inflows from other (primarily urban) areas to maintain the population size of a given cohort.

Perspectives

Notes

1 Until recently, research on urban/rural migration has been hampered by a lack of appropriate data. In Quebec, a team of researchers has recently published a collection of papers that examine migration patterns for certain rural areas in that province (Gauthier, 1997).

2 This statement applies to both census and tax data. The only exception is for persons aged 25 to 29 leaving rural areas in New Brunswick, whose main destination varied according to data source: urban areas outside the province (census data) or urban areas inside the province (tax data).

3 Alternative scenarios can be considered. A young person may move from a rural area in the Atlantic provinces to Toronto, find a highly paid job involving long hours and decide to return to the Atlantic provinces to a job with lower wages but shorter hours. In this case, the return to the rural community would not be motivated by failure to find a well-paid job.

Reference

Gauthier, M., ed. *Pourquoi partir ? La migration des jeunes d'hier et d'aujourd'hui*. Sainte-Foy: PUL-IQRC, 1997.

What's new?

Recent reports and studies

■ JUST RELEASED

■ *Historical census data*

An electronic version of the *Censuses of Canada, 1665 to 1871, Statistics of Canada, Volume IV* is now available. This unique reference volume was first published in 1876, and has been out of print for more than a century. It depicts the growth and development of Canada from the earliest settlements to Confederation and on to 1871, in introductory texts and extensive statistical tables.

Many researchers have asked for this volume to be published in electronic form. In response, Statistics Canada has re-issued the original content of this publication on its website (www.statcan.ca) without alterations to the original text and data.

The introduction (Catalogue no. 98-187-XIE, free) is available in both HTML and Adobe Acrobat PDF format; the latter can be downloaded for printing. The statistical tables can be opened and downloaded using E-STAT, which is available only to educational institutions. For more information, contact Ruth Kelly, Dissemination Division, at (613) 951-1168.

■ *Inter-corporate ownership*

The structure of the Canadian corporate sector is constantly shifting. Stock splits, mergers and takeovers are regular occurrences affecting the concentration of corporate assets and the degree of foreign control.

The *Inter-Corporate Ownership* directory is the most authoritative and comprehensive source of information available on corporate ownership. It tracks the ownership of the largest Canadian corporations and provides up-to-date information

on takeovers and other substantial changes. Ultimate corporate control is determined through a study of holdings by corporations, the effects of options, insider holdings, convertible shares and interlocking directorships. The information is based on non-confidential returns filed by Canadian corporations under the *Corporations Returns Act*.

The directory, which now lists more than 95,000 corporations, is a unique list of "who owns what" in Canada. The data are presented in a tiered format, illustrating at a glance the hierarchy of subsidiaries within each corporate structure. The entries for each corporation provide both the country of control and the country of residence. As well, the inclusion of the Standard Industrial Classification code enables study by industrial sector.

The 2000 *Inter-Corporate Ownership* directory (Catalogue no. 61-517-XPB, \$350), produced biennially, is now available. A Windows-based version of the directory, updated quarterly, is available on CD-ROM (Catalogue no. 61-517-XCB, \$350/\$995). For more information, or to enquire about concepts, methods or data quality, contact Jeannine D'Angelo or Martin Brière, Industrial Organization and Finance Division, at (613) 951-2604 or (613) 951-0519, respectively.

■ *Analytical Studies Branch research paper series*

Patterns of Corporate Diversification in Canada: An Empirical Analysis

J. Baldwin, D. Beckstead, G. Gellatly and A. Peters
Research Paper Series no. 150

While small firms account for the lion's share of new job creation, large businesses continue to play a key role in shaping Canada's economic landscape. This study examines the breadth of

Canada's most diversified firms—companies whose operations span different industries. While these firms make up less than 1% of all Canadian businesses, they generate more than one-third of all business income and employ about one-quarter of the workforce.

The study explores how “diversified” or “multi-industry” firms expand their operations—by looking at whether their activities extend across closely related industries (those linked by strong trading relationships). It finds that these firms are more likely to develop ownership links across “unrelated” industries—across sectors that do not have strong trading relationships. Only 18% of all corporate diversification involves industries linked by strong buyer-seller relationships.

The study also examines whether diversification varies substantially across different economic sectors. Industries with concentrated markets, economies of scale and more developed trading linkages tend to exhibit greater trends toward diversification.

Data for this study come from two databases. Business operating structures were obtained from the Business Register, the central database used to support Statistics Canada's business survey program. Inter-industry trade flows come from the Agency's input-output tables.

For more information, or to enquire about concepts, methods or data quality, contact John Baldwin, Micro Economic Analysis Division, at (613) 951-8588.

To obtain copies of these, or other studies in the Research Paper Series, contact Louise Laurin at (613) 951-4676. They are also available free on the Statistics Canada website (www.statcan.ca). The menu path is “Products and services,” “Downloadable research papers (free),” then “Analytical studies.”

■ **Article from Canadian Economic Observer**

Income inequality in North America: Does the 49th parallel still matter?

The poorest 25% of Canadian families were better off than their U.S. counterparts in terms of purchasing power in 1997. On the other

hand, in the top fifth of the income spectrum, American families had disposable incomes about 25% higher.

The feature article in the August 2000 issue of *Canadian Economic Observer* also shows that average earnings of American workers (both male and female, full- and part-time, employees and self-employed) were about \$36,500 in 1997 (expressed in 1995 Canadian dollars using purchasing power parities), 29.2% higher than the Canadian average of \$28,300. However, this difference was due mainly to those at the top of the earnings distribution. The difference at the middle of the distribution (the median) was 13.6%—\$27,500 in the United States, compared with \$24,200 in Canada.

Earnings for women increased substantially in both countries across the earnings spectrum over the 1974-to-1985 and 1985-to-1997 periods. Earnings for men actually fell in both the United States and Canada for those with lower and middle level earnings (between the 15th and 60th percentiles) over the 1974-to-1985 period, and were stable from 1985 to 1997. Earnings gains were notable only among the top 30%, especially for the top 15% of men in the United States. In Canada, men's earnings increased among the top 20%, but not by as much as in the United States.

For men and women together, earnings inequality (the gap between rich and poor) and earnings polarization (a “hollowing out” of the middle) increased in both countries over the 1974-to-1985 period. Moreover, these changes were greater in Canada. However, from 1985 to 1997, earnings inequality and polarization both declined in Canada. In the United States, inequality continued to increase, but polarization declined. This latter fact has not been widely noted, even though the “disappearing middle class” was highly topical in the late 1980s, when the trend was first discovered.

When earnings inequality trends are examined for families rather than for individuals, the patterns change dramatically. Family earnings inequality rose in Canada from 1985 to 1997. This probably reflects women's higher earnings growth.

Income transfers have had a substantial equalizing effect on family income distributions on both sides of the border. In fact, the U.S. transfer system had a greater effect than Canada's over the 1974-to-1985 period. Over the 1985-to-1997 period, the reverse was true.

Income and payroll taxes, though somewhat larger in Canada than in the United States, also helped lessen inequality. But in both countries, income taxes had considerably less influence than did income transfers.

Canadian Economic Observer (Catalogue no. 11-010-XPB, \$23/\$227) is a monthly publication. For more information about this article, or to enquire about concepts, methods or data quality, contact Michael Wolfson or Brian Murphy, Analysis and Development Branch, at (613) 951-8216 or (613) 951-3769, respectively.

■ **The Interwar Labour Database**

Since World War II, Canada has gathered considerable labour market data to monitor changes in employment. One important source has been the Labour Force Survey (LFS), which gathers information from a sample of Canadian households. Prior to 1945, some labour data existed, much going back to World War I. Unfortunately, they came from a variety of sources, related to different concepts, and covered only some segments of the labour market. The *Interwar Labour Database (ILD)* attempts to integrate early data to give as full a picture as possible of the economic conditions faced by Canadian workers from 1919 to 1944.

During this period, four censuses provided labour information. In addition, monthly surveys were conducted by the Department of Labour, which gathered employment information from large employers and unemployment statistics from trade unions. Both these sources offered only partial coverage of the labour market. However, because they tell something about movements over the seasons and economic cycles, their information can be used to project the benchmark census data.

Results from ILD are presented in two alternative formats. One file provides the final results only, by month and province, which will satisfy the needs of those solely interested in the results. A second file provides the source data and the calculation formulae as well as the results. This will serve the needs of those who wish to examine the methods used to derive the data. Users may also use the file to experiment with alternative calculation procedures, or to use the contents as a starting point for further work.

For more information, or to order the *Interwar Labour Database*, contact Henry Pold, Labour and Household Surveys Analysis Division, at (613) 951-4608; fax: (613) 951-4179; henry.pold@statcan.ca.

■ **Innovation Analysis Bulletin**

To understand the relationship between science and technology (S&T) skills and the labour market, Statistics Canada has produced two studies that provide some insight into where these skills are deployed. Both use field of study and level of postsecondary degree as an indicator of skills.

The first study, *A Dynamic Analysis of the Flows of Canadian Science and Technology Graduates into the Labour Market*, was summarized in the first issue of the *Innovation Analysis Bulletin* (Catalogue no. 88-003-XIE [1, no. 1]). This study, based on an analysis of the National Graduates Survey, showed in which industries new science and technology graduates were employed. The results indicated that the greatest and fastest growing concentration of recent S&T graduates was in business services industries. These industries include computer and related services, consulting engineering and management consulting services.

The second study, *An Analysis of Science and Technology Workers: Deployment in the Canadian Economy* (summarized in a later issue of the *Bulletin* [2, no. 2]), looks at the field of study of the working-age (15 and over) population and their economic characteristics. The report provides details on the industry and employment status of graduates in key S&T disciplines.

In 1996, some 5.0 million people had S&T degrees. They accounted for about 22.1% of the total working-age population—17.8% more than in 1991. The working-age population without S&T degrees (including persons with no post-secondary diploma) grew at only one-fifth the rate.

Service-producing industries had about the same proportion of S&T graduates as goods-producing industries: about 25%. However, the former employed about three times as many persons. Degree holders in engineering and applied technologies accounted for two-thirds of the S&T degree holders in the goods-producing industries. In the service-producing industries, the degrees were more evenly distributed but with a predominance in engineering and applied technologies, health sciences, and social sciences.

The full paper is available free of charge on the Statistics Canada website (www.statcan.ca). The menu path is "Products and services," then "Downloadable research papers (free)." The *Innovation Analysis Bulletin* is also available under "Products and services," "Downloadable publications (free)," under the category "Science and technology." For further information, contact Claire Simard, SIEID, Knowledge Indicators Section, Statistics Canada, at (613) 951-1916; claire.simard@statcan.ca.

■ *Sub-provincial employment*

A new CD-ROM product, *Sub-provincial Employment Dynamics*, provides information on the births and deaths of jobs and businesses by sub-provincial areas from 1983 to 1996. These include census metropolitan areas, census agglomerations, and specific towns and rural areas in all provinces and territories.

The data include numbers of new jobs and businesses created from one year to the next, and the number of jobs that can no longer be identified.

The tables have been produced from the small area file that is an extension of the Longitudinal Employment Analysis Program database. It allocates employment and T4 payroll data by sub-provincial units, and provides an industrial distribution of payroll and employment by firm size at these smaller geographic levels.

The CD-ROM *Sub-provincial Employment Dynamics* (Catalogue no. 61F0027XCB, \$500) is now available. To order a copy, or for more information, contact Keith Lance, Small Business and Special Surveys Division, at (613) 951-5226.

■ *Independent truck drivers*

The nearly 50,000 self-employed Canadians who were independent truckers (owner-operators) in 1997 worked long hours for low pay and were far more likely to feel stressed than drivers employed by trucking companies.

Independent truckers worked an average of 52.3 hours per week. This was somewhat longer than the average 49.7 hours put in by wage-earning truck drivers employed by trucking companies, and far more than the average 36.7 hours put in by other workers in the paid labour force.

Despite the longer hours, independent truckers had average after-tax earnings of \$16,000, lower than the average of \$18,600 for other self-employed tradespeople and labourers, and only 60% of the \$26,800 in after-tax earnings of drivers who were employed by trucking companies. In addition, 8 out of 10 independent truckers reported high to somewhat high levels of work-life stress, compared with two-thirds of drivers who were employees of trucking companies.

These findings are documented in a new research paper, *The Cost of Independence: Socio-economic Profiles of Independent Truck Drivers*, available as part of a series of transportation-related research papers released in recognition of National Transportation Week (June 4 to 10, 2000). This paper (Catalogue no. 53F0002XIE, free), as well as other reports and studies on various aspects of transportation, can be downloaded from Statistics Canada's website (www.statcan.ca). On the "Products and services" page, choose "Downloadable research papers (free)." Copies can also be obtained from Jean-Robert Larocque, Transportation Division, at (613) 951-2486; larocque@statcan.ca. For more information, or to enquire about concepts, methods or data quality for this study, contact Irwin Bess, Transportation Division, at (613) 951-9605; fax: (613) 951-0579; bessirw@statcan.ca.

■ *Employment, earnings and hours*

Annual Estimates of Employment, Earnings and Hours 1983-1999, based on the Survey of Employment, Payrolls and Hours, has been released in electronic format. The new CD-ROM makes use of the Beyond 20/20 Professional Browser, which enables users to manipulate and graph the data. The CD-ROM also includes a publication covering 1987 to 1999, which can be printed using Adobe Acrobat.

The disk provides data tables for more than 200 industries at the national, provincial and territorial levels, with information such as employment, average weekly and hourly earnings, average weekly hours and total weekly payrolls. Also included is the *Help-Wanted Index 1981-1999* supplement.

Annual Estimates of Employment, Earnings and Hours 1983-1999 (CD-ROM only: Catalogue no. 72F0002XCB, \$150; CD-ROM and paper: Catalogue no. 10-3009XKB, \$185) is now available. For more information on this electronic product, or to order, contact the Client Services Section, Labour Statistics Division, at (613) 951-4090; fax: (613) 951-4087; labour@statcan.ca or order@statcan.ca.

■ *Self sufficiency project*

The data file and preliminary results are now available from the second follow-up survey for the Self Sufficiency Project (SSP). The SSP is a pilot project conceived and funded by Human Resources Development Canada and managed by the Social Research and Demonstration Corporation. Statistics Canada was responsible for data collection.

The SSP was designed to evaluate the effect of an earnings supplement offered to single parents on Income Assistance who find a full-time job and subsequently leave the program. The earnings supplement was offered for a maximum of three years to each eligible person. Conducted in New Brunswick and British Columbia, the SSP set out to measure the effect of the supplement on the employment rate and household income, among other things. To do

this, information was collected on demographics, employment, job search activities, education levels, child care requirements, housing (location, ownership and other factors) and other variables.

For more information, or to enquire about concepts, methods or data quality, contact the Social Research and Demonstration Corporation at (613) 237-4311.

■ *Volunteering activity*

The non-profit sector: inventory of data resources

In Canada, only five principal sources of statistical information on the non-profit sector exist. First, limited annual information about registered charities and large non-charitable, non-profit corporations is available from the Charities Division of the Canada Customs and Revenue Agency. Virtually nothing is known about the great majority of non-profit corporations that are not registered charities.

In addition, two national surveys by Statistics Canada in 1987 and 1997 provide data on volunteers. The 1997 survey also provides information regarding charitable giving and participation in civic affairs. Several General Social Surveys, also by Statistics Canada, have generated limited data on volunteering as well. Statistics on donations are also produced from the Survey of Household Spending and from administrative data provided to Statistics Canada by other government departments.

The report *Publicly Available Data Resources on the Nonprofit Sector in Canada* profiles 14 data files from which data or custom analyses can be obtained. All but one are government data sources.

Ontario's voluntary organizations

During the past decade, many voluntary organizations in Ontario have faced budget cuts, new public policies and changing community demands. A new study, *Voluntary Organizations in Ontario in the 1990s*, examines how voluntary groups are coping and looks at the state of the voluntary sector in general.

Volunteers are in short supply and income instability is widespread in voluntary agencies, especially small organizations, which have few options for expanding their funding base.

As part of an ongoing initiative to build a comprehensive knowledge base for the voluntary sector, this study provides and assesses information that could be included in a national statistical program on voluntary organizations.

Profile of active volunteers

Four million Canadians give more than 60 hours of their time each year as volunteers. The report *Distinguishing Characteristics of Active Volunteers in Canada* provides a detailed statistical portrait of these people.

This report is based on a study that analyzed data from the 1997 National Survey of Giving, Volunteering, and Participating. Some 18,000 people aged 15 and over participated in the survey.

The study profiles the principal characteristics of active volunteers from a set of nearly 50 traits examined. One of the characteristics that set apart the majority of active volunteers across the country is their high level of involvement not only in volunteering but also in charitable giving, informal helping of others, social activity and civic participation. The study also reveals the different patterns of distinctive characteristics across the country.

These reports are part of a series of studies on the non-profit sector conducted under the auspices of Statistics Canada's Nonprofit Sector Knowledge Base Project. They are available on Statistics Canada's website (www.statcan.ca) under "Products and services" (Catalogue no. 75F0033MIE, free).

For more information, or to enquire about concepts, methods or data quality, contact Paul Reed, National Accounts and Analytical Studies Field, at (613) 951-8217; reedpau@statcan.ca.

■ *Education at a glance, 2000*

The report, *Education at a Glance: OECD Indicators, 2000 Edition*, published by the Organisation for Economic Co-operation and Development, is now available. It presents an updated range of internationally comparable statistics.

The 30 indicators represent the consensus of professional thinking on how to measure the current state of education internationally. The volume is organized by theme and provides background information to accompany the tables and charts.

The education indicators for Canada were calculated from data provided by Statistics Canada as part of its involvement with the Canadian Education Statistics Council, which includes the provincial and territorial deputy ministers of education, through the Council of Ministers of Education, Canada.

More details on this report are available at http://oecd.org/news_and_events, and the underlying data at www.oecd.org/els/stats/els_stat.htm. For more information, contact Jim Seidle, Centre for Education Statistics, at (613) 951-1500; jim.seidle@statcan.ca.

■ *Education in Canada, 1999*

This annual review of statistics on Canadian education summarizes data on institutions, enrolment, graduates, teachers and financing for all levels of education. Its 71 tables present a comprehensive overview of the key variables in Canadian education.

Ten-year time series are shown for most variables at the Canada level and five-year time series at the provincial level. The publication also provides demographic data from the census, as well as educational attainment, labour force participation rates and unemployment rates of the adult population from the Labour Force Survey.

Education in Canada, 1999 (Catalogue no. 81-229-XPB, \$51 or Catalogue no. 81-229-XIB, \$38) is now available. For more information, or to enquire about concepts, methods or data quality, contact Jim Seidle or Sharon-Anne Borde, Centre for Education Statistics, at (613) 951-1500; jim.seidle@statcan.ca or (613) 951-1503; sharon-anne.borde@statcan.ca, respectively. Or contact the Centre at 1 800 307-3382; fax: (613) 951-9040; educationstats@statcan.ca.

■ Literacy

Schooling, Literacy and Individual Earnings

This report, based on the 1994 International Adult Literacy Survey, examines the validity of comparing average literacy scores across jurisdictions. It also sets bounds on the proportion of personal benefit that can be explained by level of literacy.

Literacy in the Information Age

The final report from the International Adult Literacy Survey is a comparative study of literacy skills in 20 countries, including the United States and Canada. This is a joint release of Statistics Canada and the Organisation for Economic Co-operation and Development (OECD).

This study provides the first reliable and comparable estimates of the distribution of literacy levels in the adult population. It offers new insights into the factors that influence the development of adult skills at home and at work.

Schooling, Literacy and Individual Earnings (Catalogue no. 89-552-MPE, \$10) is now accessible on the Statistics Canada website (www.statcan.ca). A paper summarizing the findings, *Highlights for Schooling, Literacy and Individual Earnings* (Catalogue no. 89F0120XIE, free), is also available. *Literacy in the Information Age* can be accessed from the OECD online bookshop at <http://electrade.gfi.fr/cgi-bin/OECDBookShop.storefront/>. Or contact Renouf Publishing at (613) 745-2665. For more information, or to enquire about concepts, methods or data quality, contact T. Scott Murray, Culture, Tourism and the Centre for Education Statistics, at (613) 951-9035.

■ Farm income

Net cash income for farmers—the difference between their cash receipts and operating expenses—turned around in 1999 after declining sharply in 1998. Farmers recorded net cash income of \$6.4 billion in 1999, up 1.9% from 1998, as both cash receipts and operating expenses reached record levels.

Cash receipts increased 2.3% to \$30.5 billion with cattle, hogs and government program payments accounting for much of the growth. Operating expenses rose 2.4% to \$24.1 billion, owing to higher interest, livestock purchase, heating fuel and commercial seed costs.

Net cash income in 1999 was well short of the \$6.9 billion record set in 1997, but above the previous five-year average of \$6.3 billion. Net cash income rose each year between 1993 and 1997, then plunged almost 10% in 1998 as a result of lower receipts from cereal grains and hogs.

Lower prices for grains and oilseeds were mainly responsible for the drop in crop revenues in 1999. Abundant world grain supplies pushed prices for most grains and oilseeds down to their lowest levels since 1994. Receipts were down significantly for canola, soybeans and durum wheat, as prices for all three were well below their five-year averages.

Program payments reached a five-year high of \$2.0 billion in 1999 in the wake of low commodity prices and poor growing conditions in some regions. Payments were up 39.5% from 1998 and 41.9% from the previous five-year average, but still below the 1992 peak of \$3.8 billion. Payments under Agricultural Income Disaster Assistance, its related provincial disaster programs, and the Net Income Stabilization Account (NISA) were the major contributors to the increase.

Farmers withdrew \$445 million in 1999 from the government portion of their NISA account, compared with \$269 million in 1998. A change in the income level required for withdrawals and lower farm income in 1998 may explain the higher level of NISA payments.

The report *Agriculture Economic Statistics Supplement* (Catalogue no. 21-603-UPE, \$26/\$52) is now available. For more information on net farm income, or to enquire about concepts, methods or data quality, contact Gail-Ann Breese or Bernie Rosien, Agriculture Division, at (204) 983-3445; gail-ann.breese@statcan.ca or (613) 951-2441; bernie.rosien@statcan.ca, respectively. For more information on farm cash receipts, contact Kimberley Boyuk, Agriculture Division, at (613) 951-2510; kimberley.boyuk@statcan.ca.

■ *Agricultural statistics*

Extraction System of Agricultural Statistics (ESAS) offers an extensive collection of the most requested physical and financial data on farming. This product is a co-operative effort between Statistics Canada and Agriculture and Agri-Food Canada.

This CD-ROM enables extraction of data by census agricultural region, farm type and revenue class. The 2000 version contains a full year of new data, as well as an online user guide and reference manual. ESAS lets the user reorganize a report, perform calculations and create graphs. One can also view selected tables on-screen, print them or export them for use in other applications. Whether one is interested in dairy production in Quebec or off-farm income in Saskatchewan, ESAS provides desktop access to all the data.

The CD-ROM *Extraction System of Agricultural Statistics* (Catalogue no. 21F0001XCB, \$625) is now available. An update can be purchased for \$295. A 50% educational discount is also available. To order, contact your nearest Statistics Canada Regional Reference Centre or call toll-free 1 800 267-6677. For more information, contact Linda Brazeau, Agriculture Division, at (613) 951-5027 or 1 800 465-1991; linda.brazeau@statcan.ca or agriculture@statcan.ca.

■ *Employer pension plans*

The publication *Trusted Pension Funds, Financial Statistics* provides an overview of the assets in Canada's retirement income programs, as well as a description and analysis of the assets, revenues and expenditures of trusted pension funds. The data are based on a biennial census of trusted pension funds.

Canada's retirement income system has several important components: government-sponsored social security plans (the Canada and Quebec Pension Plans [C/QPP]); employer-sponsored pension plans; and personal savings vehicles, most notably registered retirement savings plans (RRSPs).

Employer-sponsored pension plans are often called registered pension plans (RPPs) as they must be registered with the Canada Customs and Revenue Agency and one of the pension supervisory authorities. Trusted pension funds hold the major portion of the assets in these plans, and almost all of the assets are invested in the capital and financial markets. Most of the remaining monies are held in public sector plans. These monies were not, in 1998, invested in the markets; this is now changing. Trusted funds are the focus of this newly released report.

The assets of Canada's 15,213 employer-sponsored pension plans have grown at a far faster rate than those of other major retirement income programs. Between 1996 and 1998, assets in these plans increased 22.0% to \$644.4 billion, whereas those in RRSPs increased only 7.8%, to \$241.1 billion. The C/QPP combined assets declined 4.3% to \$49.4 billion.

In 1998, about 5.1 million employees belonged to employer-sponsored pension plans. About three-quarters of them were covered by trusted pension funds.

Since 1990, the trusted pension fund industry—in particular, that portion representing many public sector employees—has undergone a major shift in investment mix. The appeal of rising stock prices in part explains this shift, as does a trend by fund managers to take a more active role in managing assets.

The 1998 issue of *Trusted Pension Funds, Financial Statistics* (Catalogue no. 74-201-XPB, \$44 or Catalogue no. 74-201-XIB, \$33) is now available, as is *Quarterly Estimates of Trusted Pension Funds* (Catalogue no. 74-001-XPB, \$19 or Catalogue no. 74-001-XIB, \$14), which contains fourth-quarter 1999 results from the Survey of Trusted Pension Funds. This survey provides summary

information on these funds, focusing on quarterly variations in assets, revenues and expenditures. The analysis relates these movements to the activities of the stock exchanges and other indicators.

For more information, or to enquire about concepts, methods or data quality, contact Client Services, Income Statistics Division, at (613) 951-7355 or 1 888 297-7355; fax: (613) 951-3012; income@statcan.ca.

■ *Family income*

Average family income rebounded to its highest level in a decade in 1998, which made up for the lean years of the 1990s. The average family had an estimated after-tax income of \$49,600 in 1998, up 3.7% from the previous year after adjusting for inflation. It was the strongest annual increase since 1989. Average after-tax income was 1.7% higher than the pre-recession peak of \$48,800 in 1989. Unattached individuals also gained. At \$21,100, their average after-tax income was up 2.4% from 1997. For couples with children under 18, after-tax income was \$55,100, up 4.7% from a year earlier.

The major source of change was market income—earnings from employment, private retirement pensions and investments. For families, it jumped 4.7% to reach its highest level since 1989. It was also the first time in the decade that both after-tax and market income increased in every province.

The 1998 growth in market income was mainly the result of improved labour market conditions. The number of working people increased nearly 2.0%. Full-year full-time employment rose 3.1%, as did real gross domestic product.

Not all family types shared in the gains, however. Families headed by seniors recorded an average after-tax income of \$36,100 in 1998, essentially unchanged from the previous year. In fact, after adjusting for inflation, their average after-tax income was 7.7% below the 1989 peak of \$39,100.

With market income up, Canadians paid more in income taxes in 1998, but average transfer payments to families remained virtually unchanged from 1997. Government transfers contributed 11.1% of total family income in 1998, down slightly from the year before. The slight decrease was due, in part, to the improved economy. With average market income increasing, transfers formed a smaller proportion of total family income.

These results are based on a major new report examining family income and low income in 1998. Data come from two household surveys: the Survey of Consumer Finances (SCF) and the Survey of Labour and Income Dynamics (SLID). This new annual report replaces the series of publications traditionally produced from the results of the SCF. It includes the key tables from the previous series, plus many additions. Historical data prior to 1996 are drawn from the SCF, and data since 1996 are taken from SLID.

Income in Canada, 1998 (Catalogue no. 75-202-RPE, \$45) is now available. An electronic version, with more results, is also available on Statistics Canada's website (www.statcan.ca). To consult the list of additional tabulations, click on Catalogue no. 75-202-XIE, \$45. To download this electronic version, go to the "Products and services" page, then choose "Downloadable publications (\$)."

Data on market income, total income, government transfers, income tax, income after tax and persons in low income are also available, free of charge. On the "Canadian statistics" page, choose "The people," then "Families, households and housing," then "Income." For data on earnings, choose "The people," then "Labour, employment and unemployment," then "Earnings."

For more information, or to enquire about concepts, methods or data quality, contact Client Services, Income Statistics Division, at (613) 951-7355 or 1 888 297-7355; fax: (613) 951-3012; income@statcan.ca.

■ **Household spending**

Microdata file, 1998

The Public-use Microdata File from the 1998 Survey of Household Spending (SHS) offers information about spending on a wide variety of goods and services, as well as dwelling characteristics and information about household ownership of equipment. All records have been thoroughly screened to ensure respondent anonymity.

Starting with the 1997 survey year, the SHS replaced the Family Expenditure Survey and the Household Facilities and Equipment Survey. The SHS collects information about household and family expenditures on food, shelter, communications, child care, furniture, clothing, health care, transportation, recreation, reading materials, education, tobacco and alcohol, gambling, taxes, insurance premiums, pension contributions, money gifts and charitable contributions.

It also compiles data on type of dwelling, repairs, tenure (owned or rented), year of move, period of construction, number of rooms and bathrooms, and the age and type of heating equipment and fuel used. Household equipment includes household appliances, communications and entertainment equipment, and the number of vehicles owned.

User guide and notes

Information about the SHS is now available in three new documents.

The *1998 User Guide for the Survey of Household Spending* (Catalogue no. 62F0026MIE00001) explains survey concepts, methodology and data quality. The other two publications note the differences between the SHS and the surveys it replaced. Topics covered in the *Note to Former Users of Data from the Family Expenditure Survey* (Catalogue no. 62F0026MIE00002) include sample size, number of questions, coverage and concepts. Topics covered in the *Note to Former Users of*

Data from the Household Facilities and Equipment Survey (Catalogue no. 62F0026MIE00003) include sample size, weighting, collection method, reference period and concepts.

All three are available free on the Statistics Canada website (www.statcan.ca). On the "Products and services" page, choose "Downloadable research papers," then "Income, expenditures, pensions, assets and debts," and "Expenditures."

Survey of Household Spending Public-use Microdata File, 1998 (Catalogue no. 62M0004XCB, \$3,000) is now available. For more information about the current survey results and related products and services, or to enquire about concepts, methods or data quality, contact Client Services, Income Statistics Division, at (613) 951-7355 or 1 888 297-7355; fax: (613) 951-3012; income@statcan.ca.

■ **UPCOMING CONFERENCE**

■ ***Canadian International Labour Network (CILN) Conference***

September 24-25, 2000, Burlington, Ontario

The Canadian International Labour Network (CILN) comprises 58 labour market researchers in eight countries. Its three main research themes are the effects of labour market transitions on wages and job quality; unemployment; and the allocation of resources within families. A major component of CILN's mandate is to foster the analysis of these issues using detailed administrative and/or survey-based microdata from several countries at a time.

CILN's third major conference will include sessions on all three themes with presenters from a number of nations and disciplines. Sessions on unemployment include unemployment and

labour market dynamics, the behaviour of the unemployed, unemployment and wage determination, and joblessness and training. Sessions on wages include trends in inequality, labour mobility, sex and ethnic wage differentials, and non-cognitive skills and labour market outcomes. Sessions on family include consumption, inter-generational mobility, Canada and the United States, and welfare and income inequality.

Further information on the CILN, including program details and registration information for the conference, is available from their website at <http://labour.ciln.mcmaster.ca>, or by e-mail, fax and regular mail at Canadian International Labour Network (CILN), Department of Economics, McMaster University, Hamilton, Ontario L8S 4M4; fax: (905) 521-8232; e-mail: ciln@mcmaster.ca.

Perspectives

Are you moving?

Please forward your name, old address, new address, telephone number and client reference number to: **Statistics Canada, Operations and Integration Division, Circulation Management, 120 Parkdale Avenue, Ottawa, Ontario K1A 0T6**; or call (613) 951-7277 or 1 800 700-1033 toll free, or fax (613) 951-1584.

Please allow four weeks notice to ensure uninterrupted delivery.



Your *essential tool* for understanding agriculture in Canada

Whatever your interest in agriculture, the Census of Agriculture is your *Key Information Source* at Canada, provincial and small-area levels.

Census of Agriculture products and services are on track with your needs.

- Use **CUSTOM SERVICES** — such as custom tabulations and thematic maps — to gain unique insight *and* the competitive advantage. For information, call toll-free 1-800-465-1991 or (613) 951-2889.
- For speed and flexibility, key into the Census of Agriculture **CD-ROM** for all farm and farm operator variables.

- Look to **PUBLICATIONS** for easy-to-read tables and graphics plus straightforward analysis. The series includes *Historical Overview of Canadian Agriculture*, *Agricultural Profiles (Canada and provinces)*, *Profile of Canadian Farm Operators* and *Canadian Agriculture at a Glance*.

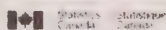
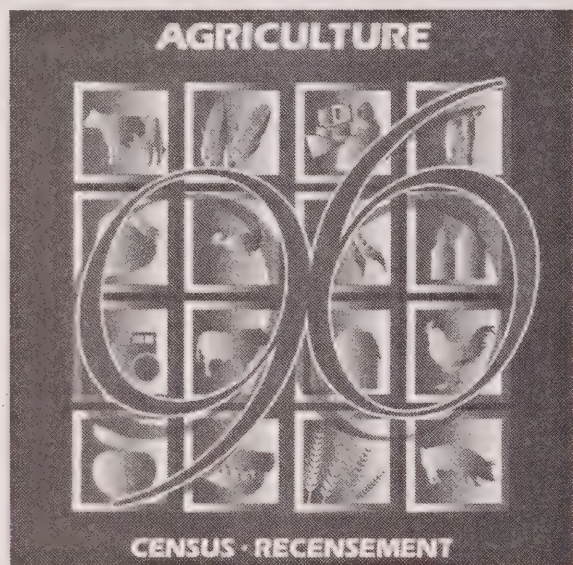
To order the CD-ROM, call toll-free 1-800-465-1991 or (613) 951-2889.

To order publications, write to Statistics Canada, Operations and Integration Division, Circulation Management, 120 Parkdale Ave., Ottawa, Ontario, K1A 0T6, or contact the nearest Statistics Canada Reference Centre listed in this publication. If more convenient, fax your publications order to (613) 951-1584 or call toll-free 1-800-267-6677 and use your VISA or MasterCard. Via Internet: order@statcan.ca



1996
Census of
Agriculture

Recensement
de l'agriculture
de 1996



Canada

*Get the
complete
picture with
the 1996
Census of
Agriculture*



Key labour and income facts

Selected charts and analysis

This section presents charts and analysis featuring one or more of the following sources. For general inquiries, contact Joanne Bourdeau at (613) 951-4722; bourjoa@statcan.ca.

Administrative data

Small area and administrative data
Frequency: Annual
Contact: Customer Services
(613) 951-9720

Business surveys

Annual Survey of Manufactures
Frequency: Annual
Contact: Richard Vincent
(613) 951-4070

Business Conditions Survey of Manufacturing Industries
Frequency: Quarterly
Contact: Claude Robillard
(613) 951-3507

Census

Census labour force characteristics
Frequency: Quinquennial
Contact: Michel Côté
(613) 951-6896

Census income statistics
Frequency: Quinquennial
Contact: John Gartley
(613) 951-6906

Employment and income surveys

Labour Force Survey
Frequency: Monthly
Contact: Marc Lévesque
(613) 951-2793

Survey of Employment, Payrolls and Hours
Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

Help-wanted Index

Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

Employment Insurance Statistics Program

Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

Major wage settlements

Bureau of Labour Information
(Human Resources Development Canada)
Frequency: Quarterly
Contact: (819) 997-3117
1 800 567-6866

Labour income

Frequency: Quarterly
Contact: Anna MacDonald
(613) 951-3784

Survey of Labour and Income Dynamics

Frequency: Annual
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

Survey of Consumer Finances

Frequency: Annual
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

Survey of Household Spending (replaces Household Facilities and Equipment Survey and Family Expenditure Survey)

Frequency: Annual
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

General Social Survey

Education, work and retirement
Frequency: Occasional
Contact: Client Services
(613) 951-5979

Social and community support
Frequency: Occasional
Contact: Client Services
(613) 951-5979

Time use

Frequency: Occasional
Contact: Client Services
(613) 951-5979

Pension surveys

Pension Plans in Canada Survey
Frequency: Annual
Contact: Patricia Schembari
(613) 951-9502

Quarterly Survey of Trusteed Pension Funds
Frequency: Quarterly
Contact: Bob Anderson
(613) 951-4034

Special surveys

Survey of Work Arrangements
Frequency: Occasional
Contact: Ernest B. Akyeampong
(613) 951-4624

Adult Education and Training Survey
Frequency: Occasional
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

Graduate Surveys (Postsecondary)
Frequency: Occasional
Contact: Bill Magnus
(613) 951-4577

Supplementary measures of unemployment

Because no single definition of unemployment is suitable for all purposes, Statistics Canada regularly publishes a set of supplementary unemployment measures to illustrate the variety of ways that unemployment can be measured. Some of these measures take account of people without work who are not usually included among the unemployed, as well as those who are employed but considered "underemployed." The former group includes "discouraged searchers" (people not looking for work because they believe no suitable job is available) and those who are "waiting" (people not looking for work because they are awaiting replies from prospective employers, or who are waiting to be recalled to a former job or who have jobs lined up to start in more than 4 weeks). The underemployed, on the other hand, are "involuntary part-time workers" (those employed part time but who would prefer to work full time). These people may otherwise have been unemployed had they not involuntarily taken up part-time work.

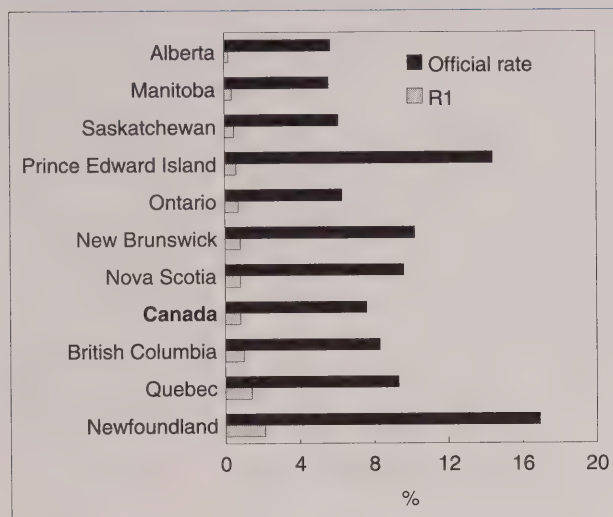
- R1** Persons unemployed one year or more (52 weeks and over) as a percentage of the labour force
- R2** Persons unemployed three months or more (12 weeks and over) as a percentage of the labour force
- R3** Adjusted Canadian official unemployment rate (comparable to the U.S. official unemployment rate)
- R4** Official rate
- R5** Official rate plus discouraged searchers
- R6** Official rate plus those waiting for recall, replies and long-term future starts
- R7** Official rate plus underemployment (involuntary part-time) expressed in full-time equivalents (reflects the underused portion of involuntary part-time workers)
- R8** Official rate plus discouraged searchers, those waiting for recall, replies and long-term future starts and the underused portion of involuntary part-time workers

Supplementary measures of unemployment and percentage-point difference from the official rate

	1998		1999	
	Rate	%-point difference	Rate	%-point difference
	%		%	
R1	1.1	-7.2	0.8	-6.8
R2	3.2	-5.1	2.8	-4.8
R3	7.6	-0.7	6.8	-0.8
R4	8.3	-	7.6	-
R5	8.8	0.5	8.0	0.4
R6	9.0	0.7	8.2	0.6
R7	11.2	2.9	10.1	2.5
R8	12.0	3.7	10.9	3.3

Source: Labour Force Survey

Longer-term unemployment is higher in Newfoundland and Quebec than in the Prairies.

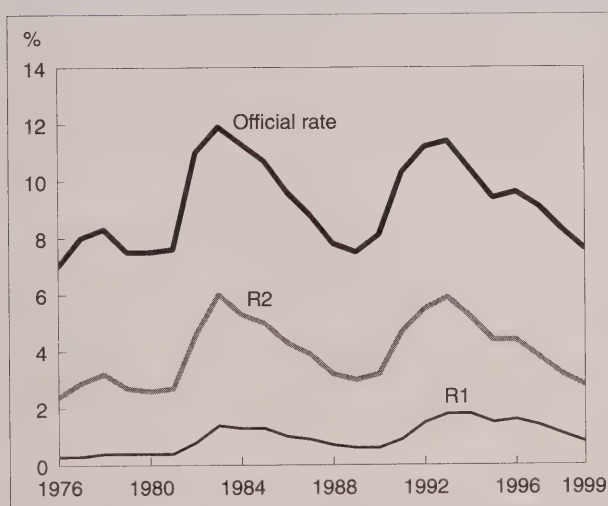


Source: Labour Force Survey, 1999

R1 shows the proportion of the labour force unemployed for one year or more. This rate follows a pattern different from that of the official unemployment rate in that it tends to lag the economic cycle. R1 moved from a low of 0.3% of the labour force in 1976 to a high of 1.4% in 1983. It was only 0.6% in 1989 and 1990, but rose above 1.4% in 1992, where it remained for the next five years. In 1999, it was 0.8%.

In 1999, Newfoundland (2.1%) and Quebec (1.4%) had the highest percentage of the labour force unemployed one year or more, while Alberta (0.2%), Manitoba (0.4%) and Saskatchewan (0.5%) had the lowest. Although Prince Edward Island had one of the highest unemployment rates, it ranked among the lowest of the provinces with longer-term unemployment.

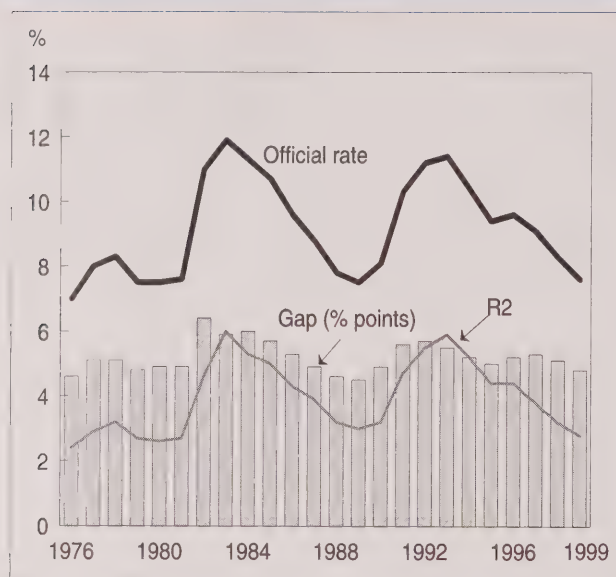
R2 tracks the official unemployment rate, while R1 lags.



Source: Labour Force Survey

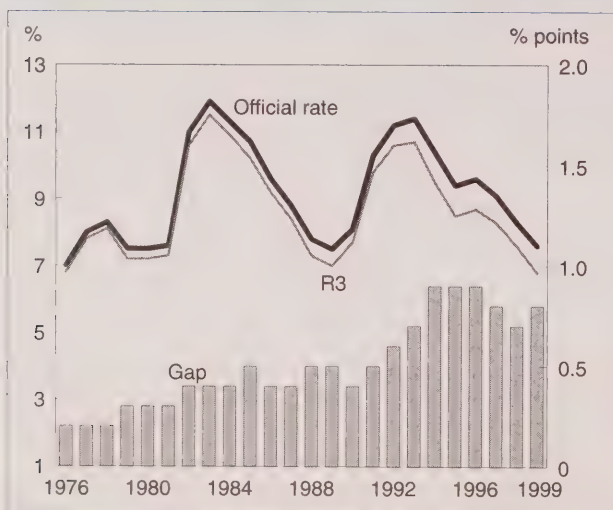
R2 looks at those unemployed three months or more as a proportion of the labour force. This measure tends to track the official unemployment rate more closely through economic cycles than does R1. In 1999, it represented about 37% of the unemployment rate while R1 represented only about 10%. At 2.8% in 1999, R2 was approaching its previous low of 2.4% (in 1976).

The gap between the official unemployment rate and R2 increases during recessions.



Source: Labour Force Survey

The gap between the official unemployment rate and R3 has increased over time.



Source: Labour Force Survey

The gap between the official unemployment rate and R2 widens during recessions. The highest gap between the two rates was in 1982, when it reached 6.4 percentage points. This gap gradually declined to a low of 4.5 in 1989. It peaked again in 1992 (5.7), and then declined more slowly, to 4.8 percentage points in 1999.

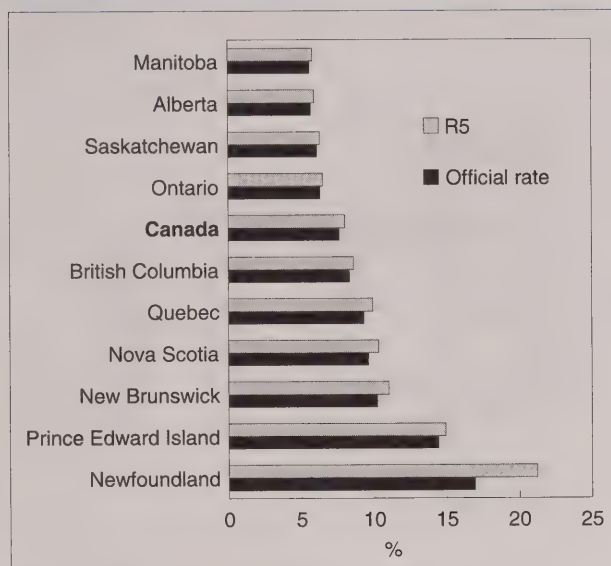
The unemployment rate reflects changes in both the rate at which persons become unemployed—the incidence of unemployment—and the length of time they stay unemployed—the duration of unemployment. Increases in the incidence are responsible for the sharp rise in the unemployment rate during the onset of recessions, while increases in duration are largely responsible for its very slow decline during recovery and expansion. This is why the official rate rose faster than R2 at the onset of the 1980s and 1990s recessions and why it fell more slowly afterward.

R3 adjusts the Canadian official unemployment rate to make it comparable to the U.S. rate. For example, the United States distinguishes between “active” and “passive” searchers and includes only “active” searchers among its unemployed. Its unemployment rate does not include persons whose only search method was passive, such as looking at advertisements in the newspaper or picking up job applications but not answering them. The Canadian rate makes no such distinction.

Also removed from the Canadian official rate to make it comparable are 15 year-olds, short-term future starts (since 1994), and searchers unavailable for work because of personal or family responsibilities. Added are full-time students looking for full-time work, whom the Labour Force Survey officially classifies as not in the labour force.

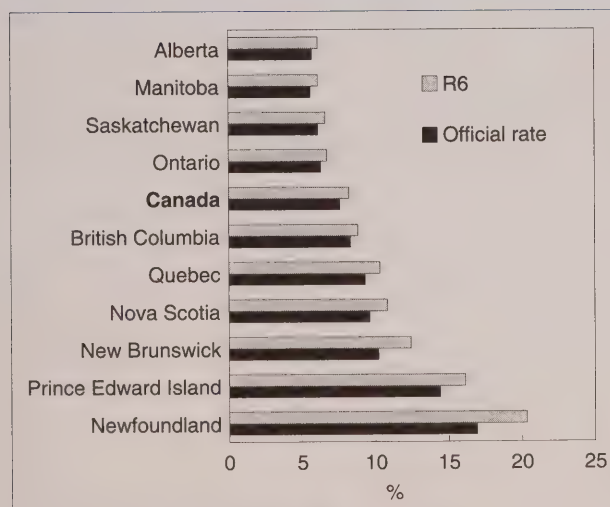
The gap between the official unemployment rate and R3 has increased over time. In the 1970s, the gap averaged 0.2 percentage points; in the 1980s, 0.3 points; and by the 1990s, 0.7 points.

Including discouraged workers has a noticeable effect on the unemployment rate in Newfoundland.



Source: Labour Force Survey, 1999

R6 is especially high in provinces with much seasonal labour.



Source: Labour Force Survey, 1999

R5 is the first rate to take into account people not usually included among the unemployed: discouraged searchers. These are people who wanted work and were available, but who did not look for a job because they believed none was to be had.

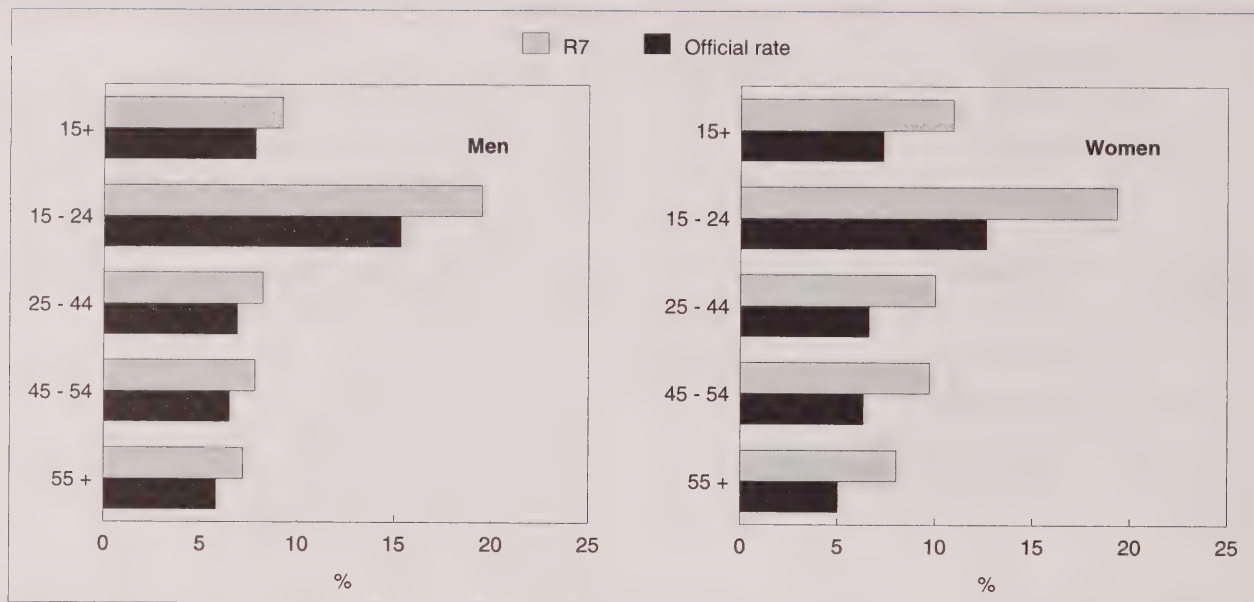
Adding discouraged searchers does not make much difference to the national rate. In 1999, R5 was about half a percentage point higher than the official unemployment rate. In Newfoundland, however, R5 was much higher than the official rate: 4.3 percentage points (a rate of 21.2%). In contrast, R5 in Alberta was only 0.2 percentage points higher than the official unemployment rate in 1999.

R6 includes those considered on the margins of the labour force, that is, those who are not searching for work but are available and waiting. They are either waiting to be recalled by a previous employer, or they have applied for a job and are waiting for replies. Also included are those who have lined up a job to start in five weeks or more.

Including these people among the unemployed increases the 1999 official unemployment rate to 8.2% from 7.6%.

The proportion of the waiting group is higher in the eastern provinces, specifically, Newfoundland, Prince Edward Island and New Brunswick. This is probably because of the seasonal nature of many jobs in this region. Almost two-thirds of people with jobs to start in more than four weeks and those waiting for a recall are seasonal workers or full-time students.

Adding involuntary part-timers to the official unemployment rate increases the rate much more for women than for men.

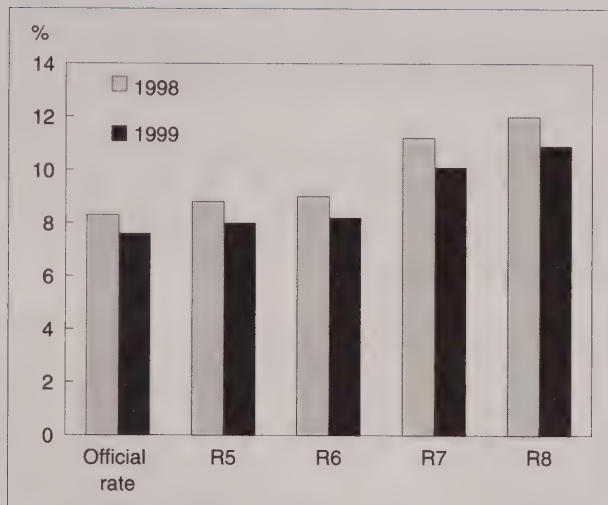


Source: Labour Force Survey, 1999

R7 adds some involuntary part-time workers to the official unemployed. However, involuntary part-timers who have a second job and work full-time hours in total (30 or more) are excluded. A further proportion of involuntary part-time workers is removed because each of these people is only partially used in the labour market. In essence, R7 converts involuntary part-time hours to their "full-time equivalent." These adjustments better reflect the number of hours of potential labour supply lost to underemployment.

As a result, R7 was 2.5 percentage points higher than the official unemployment rate in 1999. Compared with other supplementary measures, the demographic profile of R7 differs markedly from that of the official unemployment rate because so many involuntary part-timers are adult women and youths. Not surprisingly, a larger gap exists for women than men: 3.6 percentage points in 1999, compared with 1.4.

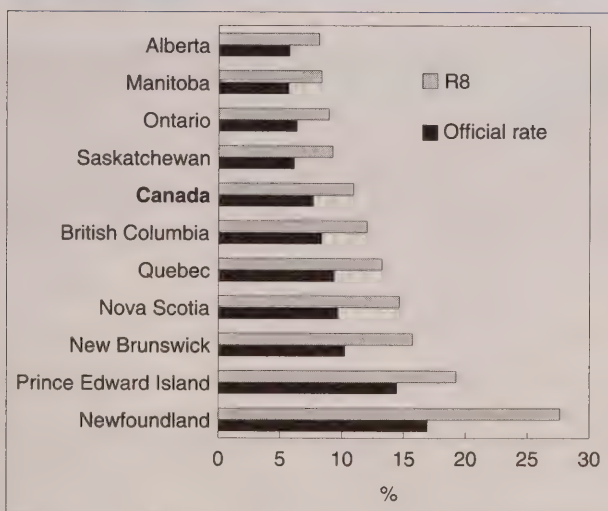
In 1999, R8 was 3.3 percentage points higher than the official unemployment rate.



Source: Labour Force Survey

R8 is the most comprehensive, and therefore highest, supplementary rate because it includes all groups from the preceding three rates. As such, R8 provides a single measure of underused labour. Included in this rate are discouraged searchers, those waiting for recall or replies, long-term future starts and the underused portion of involuntary part-timers. With the addition of these groups the unemployment rate increased by 3.7 percentage points in 1998 and 3.3 in 1999.

R8 is about 3.5 times higher for Newfoundland than Alberta.



Source: Labour Force Survey, 1999

In the eastern provinces and British Columbia R8 was above average. Newfoundland's was almost 11 percentage points higher than its official unemployment rate. Close to 30% of the potential labour resources in Newfoundland were unemployed or underused in 1999. At the other end of the spectrum, only 8.1% were unemployed or underused in Alberta.

Charts and text were adapted and updated from the Summer 1999 *Labour Force Update* (Catalogue no. 71-005-XPB). For more information, contact Jeannine Usalcas, Labour Statistics Division, at (613) 951-4720; fax: (613) 951-2869; usaljea@statcan.ca.

PERSPECTIVES

ON LABOUR AND INCOME

THE COMPREHENSIVE JOURNAL

on labour and income
from Statistics Canada

☐ Yes, I want PERSPECTIVES ON LABOUR AND INCOME
(Catalogue no. 75-001-XPE).

Subscribe to *Perspectives on Labour and Income* today!

Save
by extending your
subscription!

Save 20%
by subscribing for 2 years!
Only \$92.80 (plus taxes)

Save 30%
by subscribing for 3 years!
Only \$121.80
(plus taxes)



ORDER FORM



MAIL

Statistics Canada
Circulation Management
120 Parkdale Avenue
Ottawa, Ontario
Canada K1A 0T6



PHONE

1 800 267-6677
Charge to VISA or MasterCard.
Outside Canada and the U.S.,
and in the Ottawa area, call
(613) 951-7277.



FAX

1 800 889-9734 **order@statcan.ca**
(613) 951-1584



E-MAIL

order@statcan.ca

Please do not send confirmation for phone or fax orders.

Name

Company

Department

Address

City

Province

Postal Code

Phone

Fax

Catalogue No.

Title

75-001-XPE

Perspectives on Labour and Income

ALL PRICES EXCLUDE SALES TAXES.

Canadian clients add 7% GST and applicable PST or HST.

GST # R121491807.

Cheque or money order should be made payable to the Receiver General for Canada.

PF 097042

METHOD OF PAYMENT (Check only one)

☐ Charge to my: ☐ MasterCard ☐ VISA

Card Number

Authorized Signature

Expiry Date

Cardholder (Please print)

☐ Payment Enclosed \$

☐ Purchase Order Number

Authorized Signature

Subscription	Price (CDN \$)	Quantity	Total CDN \$
1 year	58.00		
2 years	92.80		
3 years	121.80		
Subtotal			
GST (7%) - (Canadian clients only, where applicable)			
Applicable PST (Canadian clients only, where applicable)			
Applicable HST (N.S., N.B., Nfld.)			
Shipping charges U.S. CDN \$24, other countries CDN \$40			
Grand Total			



Statistics
Canada

Statistique
Canada

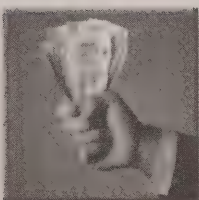
Canada



Get online

with Statistics Canada's Electronic Publications!

Go virtual with Statistics Canada's electronic publications. From Arts and Culture to Travel, Transport and Warehousing, you have over 120 titles in 18 topic categories to choose from — and the list is growing every day.



Save money.

Order online and you'll receive a 25% price reduction from that of our print publications.



Built to last.

Unlike paper, e-versions won't yellow, fade or tear. They will stay intact and accessible for years to come!



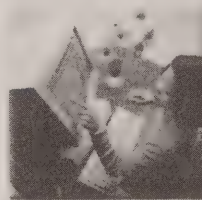
Feel safe about ordering online.

Our secure site makes using your credit card online safe and easy. Guaranteed.



Save time.

Access your publication on the day of release — no more waiting for delivery.



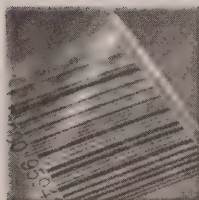
Be the first to know.

Our electronic publications are regularly available before print versions, so you always have access to the most current releases.



Access anywhere, anytime.

Get up-to-date detailed information quickly and efficiently, regardless of location and time constraints.



One price, many rewards.

Statistics Canada subscriptions offer indefinite access to your publication and up to three years of its previous issues.



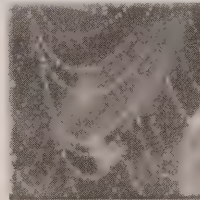
Put the data to work.

Copy text from our online publications right into your documents and databases.



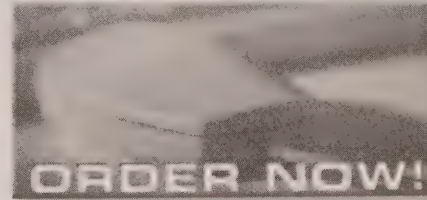
Find the information you need now.

Online documents allow you to search, locate and print exactly what you are looking for.



Be green.

By consciously choosing electronic over paper, you're doing your part to be ecologically friendly. Feel good about doing business, respecting the environment and saving precious resources.



On our site, go to Products and Services, select Downloadable publications (\$) and simply follow the steps to subscribe or purchase. It's that easy!

www.statcan.ca
BUILT FOR BUSINESS

The official source of Canadian statistics All the time — All in one place

PERSPECTIVES

ON LABOUR AND INCOME

To keep up with ...

- the education levels and the training of the labour force in Canada
- the distribution of income and trends in wages in the country
- updates on research under way in the labour and income field
- the availability of new income and labour market data

... you need

PERSPECTIVES ON LABOUR AND INCOME (Catalogue no. 75-001-XPE) from Statistics Canada.

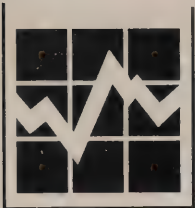
A yearly subscription to **Perspectives on Labour and Income** (four issues) costs just \$58.

Mail your order to Statistics Canada, Operations and Integration Division, Circulation Management, 120 Parkdale Avenue, Ottawa, Ontario K1A 0T6. Or FAX **1 (613) 951-1584** or **1 800 889-9734**, or call toll free **1 800 267-6677** and use your VISA or MasterCard. E-mail: **order@statcan.ca**

75-001

Government
Publications

Catalogue no. 75-001-XPE



PERSPECTIVES

ON LABOUR AND INCOME

WINTER 2000

Vol. 12, No. 4

■ RETIREMENT INCOME

- WOMEN 65 TO 69
- PENSION PLANS
- TRENDS

■ INCOME INEQUALITY
WITHIN PROVINCES

■ CUMULATIVE INDEX
1989 - 2000



Statistics
Canada

Statistique
Canada

Canada

At Your Service...

How to obtain more information

Specific inquiries about this product and related statistics or services should be directed to: *Perspectives on Labour and Income*, 9 A-6 Jean Talon, Statistics Canada, Ottawa, Ontario, K1A 0T6 (telephone: (613) 951-4608; e-mail: perspectives@statcan.ca).

For information on the wide range of data available from Statistics Canada, you can contact us by calling one of our toll-free numbers. You can also contact us by e-mail or by visiting our Web site.

National inquiries line	1 800 263-1136
National telecommunications device for the hearing impaired	1 800 363-7629
Depository Services Program inquiries	1 800 700-1033
Fax line for Depository Services Program	1 800 889-9734
E-mail inquiries	infostats@statcan.ca
Web site	www.statcan.ca

Ordering/Subscription information

This product can be ordered by

- telephone (Canada and United States) 1 800 267-6677
- fax (Canada and United States) 1 877 287-4369
- e-mail order@statcan.ca
- mail Statistics Canada
Dissemination Division
Circulation Management
120 Parkdale Avenue
Ottawa, Ontario K1A 0T6
- and, in person at the Statistics Canada Regional Centre nearest you, or from authorized agents and bookstores.

When notifying us of a change in your address, please provide both old and new addresses.

Standards of service to the public

Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner and in the official language of their choice. To this end, the agency has developed standards of service which its employees observe in serving its clients. To obtain a copy of these service standards, please contact Statistics Canada toll free at 1 800 263-1136.

PERSPECTIVES

ON LABOUR AND INCOME

■ Departments

- 3 Forum
- 5 Highlights
- 7 In the works
- 39 What's new?
- 47 Key labour and income facts
The labour market in the 1990s
- 57 Cumulative index 1989-2000

Perspectives on Labour and Income (Catalogue no. 75-001-XPE; aussi disponible en français: *L'emploi et le revenu en perspective*, n° 75-001-XPF au catalogue) is published quarterly by authority of the Minister responsible for Statistics Canada. ©Minister of Industry 2000. ISSN: 0840-8750.

SUBSCRIPTION RATES: CDN \$18.00 per issue, CDN \$58.00 for a one-year subscription. Shipping charges outside Canada:

	Single issue	Annual subscription
United States	CDN \$ 6.00	CDN \$24.00
Other countries	CDN \$10.00	CDN \$40.00

All prices exclude sales taxes.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any other means, electronic, mechanical, photocopying, recording or otherwise, without prior written permission from Licence Services, Marketing Division, Statistics Canada, Ottawa, Ontario, Canada K1A 0T6.

Indexed in the *Canadian Index*, *Canadian Periodical Index*, *P.A.I.S. International*, *Sociological Abstracts*, *Econlit*, *Canadian Business and Current Affairs* and *Employee Benefits Infosource*. Also indexed in French in *L'Index de l'Actualité* and *Point de Repère*.

■ Articles

9 Incomes of younger retired women: the past 30 years

Katherine Marshall

This article examines changes in the source, distribution and level of individual incomes of younger (65 to 69) retired women (and men) resulting from the development and maturation of public and private pension plans over the past 30 years. It also looks at the long-term increase in women's labour force involvement (including participation, earnings and pension coverage) as one of the reasons for the reduction of differences between the incomes of elderly women and men.

18 In for the long term: pension plans offered by employers

Robert D. Anderson

For millions of Canadians, benefits from pension plans offered by many employers or unions will be one of their main sources of retirement income. This article situates these pension plans within the context of other, better-known, retirement income programs and describes the investment strategy these plans follow.



■ Editor-in-Chief

Ian Macredie
(613) 951-9456
ian.macredie@statcan.ca

■ Managing Editor

Henry Pold
(613) 951-4608
henry.pold@statcan.ca

■ Editors

Catherine Hardwick
Bruce Rogers

■ Data Services

Pierre Bérard
Joanne Bourdeau
Laura Fraser

■ Production and Composition

Heather Berrea
Cynthia Fortura
Diane Joannis
Annamma John
Ann Trépanier

■ Printing

Dissemination Division

Symbols

The following standard symbols are used in Statistics Canada publications:

- figures not available
- ... figures not appropriate or not applicable
- nil or zero
- amount too small to be expressed
- p preliminary figures
- r revised figures
- x confidential to meet secrecy requirements of the Statistics Act

The paper used in this publication meets the minimum requirements of American National Standard for Information Sciences – Permanence of Paper for Printed Library Materials, ANSI Z39.48 – 1984.

23 Incomes of seniors

John Myles

Low income rates among Canadian seniors, measured by the usual “relative” standard (persons with adjusted incomes less than 50% of the median), are now among the most moderate in the OECD. This article uses the Survey of Consumer Finances to review 1980-to-1996 trends in the level and distribution of income among persons aged 65 and over, in the context of the maturation of Canada’s earnings-related pension schemes, both public and private. (Adapted from an analytical report published by Statistics Canada, and by the *Canadian Journal on Aging*.)

33 Income inequality within provinces

Dimitri Sanga

This study, which covers the period 1980 to 1998, looks at the degree of inequality in the distribution of market income, total income and after-tax income within each province, and compares it with the degree of income inequality in other provinces.

Back Issues: *Did you miss something?*

Don't worry! Back issues of **Perspectives on Labour and Income** are available.

Feature articles in these issues include:

- | | |
|--------------------|--|
| Autumn 2000 | Unemployment kaleidoscope • Taxes internationally • Payroll taxes • Unionization • Rural roots |
| Summer 2000 | Provincial earnings • Help wanted • Payroll taxes • Income taxes • Knowledge workers |
| Spring 2000 | RRSPs • Earnings of lawyers • Gambling update • Young volunteers • School-to-work • Long hours and health |
| Winter 1999 | “Copreneurs” • Truck drivers • Earnings ratios • Earnings of physicians • Exports, GDP and jobs • Cumulative index |

For more information contact **Statistics Canada, Dissemination Division, Circulation Management, 120 Parkdale Avenue, Ottawa, Ontario K1A 0T6**. Or, call toll free **1 800 267-6677**.

Perspectives on Labour and Income

The quarterly for labour market and income information

Forum

From the Managing Editor

■ Perspectives online

The first monthly online issue of *Perspectives* appeared on the Statistics Canada website October 10, 2000. As mentioned here previously, our goal is to disseminate analysis of labour and income issues on a more timely basis, as well as to further integrate our analytical products. In addition to *Perspectives'* usual content, the "new" version incorporates contents of the former *Labour Force Update*, as well as articles produced in other divisions of the Labour and Household Surveys Branch (namely, the Income Statistics Division and the Special Surveys Division).

Each online issue includes at least one full-length article (with a maximum of three per month). These monthly releases will then be reproduced in the quarterly print version. Twelve months following their initial release, articles will be available free of charge in an "Archives" bin, currently under development. All articles, since the first issue of *Perspectives* in 1989, will be available in this fully searchable historical bin.

The online edition also includes some features of the quarterly version. For example, "Editor's Corner" (similar to "Forum") provides any letters to the editor, errata, and comments on issues related to labour and income. "Key labour and income facts" charts the latest available monthly statistics from the Labour Force Survey; Employment Insurance; the

Help-wanted Index; and the Survey of Employment, Earnings and Hours, and provides links to the "Canadian statistics" page on the Statistics Canada website. The print version of "Key labour and income facts" remains unchanged.

"More news" is similar to "What's new?" in that it announces recently released data, research and products related to labour and income, as well as selected upcoming conferences and special events. Finally, we have included links to various guides and manuals, such as the *Labour Market and Income Data Guide* and the *Guide to the Labour Force Survey*. Users can find these links under "Survey information." In short, the online version of *Perspectives* is your entry point to Statistics Canada's wealth of information on labour and income.

We hope you will find the monthly issue timely, informative and useful. *Perspectives* can be accessed from the "In depth" bin on the main Statistics Canada home page (www.statcan.ca). In addition to the regular contacts listed in the publication, users can reach us directly at perspectives@statcan.ca. As always, we welcome your comments and suggestions.

Henry Pold
Managing Editor
E-mail: henry.pold@statcan.ca

Perspectives

We welcome your views on articles and other items that have appeared in *Perspectives*. Additional insights on the data are also welcome, but to be considered for publication, communications should be factual and analytical. We encourage readers to inform us about their current research projects, new publications, data sources, and upcoming events relating to labour and income.

Statistics Canada reserves the right to select and edit items for publication. Correspondence, in either official language, should be addressed to Managing Editor, *Perspectives on Labour and Income*, 9th floor, Jean Talon Building, Statistics Canada, Ottawa K1A 0T6. Fax (613) 951-4179; e-mail: perspectives@statcan.ca.



Occupational Surveillance in Canada: *Cause-Specific Mortality Among Workers, 1965-1991*

Your direct link to over 27,000 comparisons between occupation and cause of death for men and women!

Increasingly, we hear people blaming their jobs for the state of their health. Are they right? Do they have just cause?

For the first time, Statistics Canada has released 27 years of data which address these questions and concerns all in one product. An easy-to-use bilingual CD-ROM, ***Occupational Surveillance in Canada: Cause-Specific Mortality Among Workers, 1965-1991*** uncovers the impact that 670 different occupations have on 70 different causes of death.

Ground-breaking data

Occupational Surveillance in Canada is the result of a study of close to 700,000 working people across Canada — 457,224 men and 242,196 women. Representing about 10% of the total Canadian workforce at the time, they all worked in an occupation for at least one year between 1965 and 1971 and were then tracked until 1991.

Easy, fast and flexible

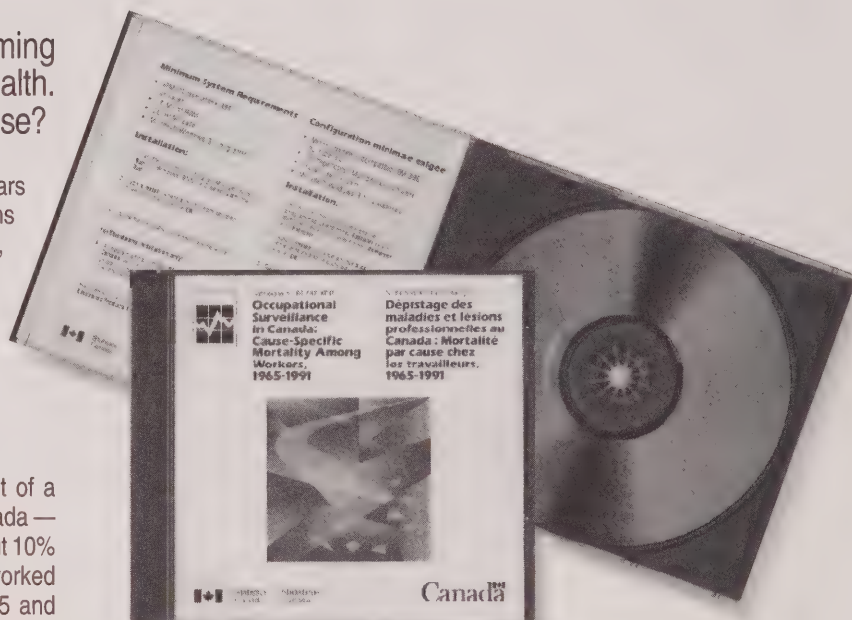
Finding information is a snap with ***Occupational Surveillance in Canada***. The data can be reviewed in already prepared tables or they can be manipulated from ASCII files into the spreadsheet of your choice (such as Excel or Lotus). Minimum system requirement: IBM compatible 486 or better.

Inspiring new avenues for enquiry

Occupational Surveillance in Canada is designed for professionals in public health, the insurance industry, workers' compensation and safety boards, ministries of health and labour, regulatory agencies, corporations, unions, personnel and medical departments, and women's studies!

This data product offers the information you need to:

- detect previously unsuspected comparisons between occupation and death



- target areas for future studies on occupational mortality risks among women and men
- adjust employment conditions to protect employees from potential dangers
- and much more!

This valuable research tool is the underpinning for any number of further research projects!

Order ***Occupational surveillance in Canada: Cause-specific Mortality Among Workers, 1965-1991*** on CD-ROM (Catalogue no.84-546-XCB) now for only \$500 in Canada (plus applicable taxes) and US\$500 outside Canada.

To order, **CALL** toll-free at 1 800 267-6677, **FAX** your order to 1 877 287-4369 or **MAIL** your order to Statistics Canada, Dissemination Division, Circulation Management, 120 Parkdale Avenue, Ottawa, Ontario, K1A 0T6 Canada. You may also order via **E-MAIL**: order@statcan.ca or **CONTACT** your nearest Statistics Canada Regional Reference Centre by calling 1 800 263-1136.

Visit our Web site at:

www.statcan.ca

Highlights

In this issue

■ **Incomes of younger retired women: the past 30 years** ... p. 9

- Younger retired Canadians have become more reliant on pension income. In 1971, the Canada and Quebec Pension Plans and private pensions provided only 14% of total income for women aged 65 to 69 and 19% for men. By 1997, income from these sources had increased to 36% and 46%, respectively.
- Public and private pension income has helped raise the relative income of 65-to-69 year-old women—from 41% of men's in 1971 to 61% in 1997.
- The main source of income received by younger retired women in 1997 (34%) was still the combined Old Age Security (OAS) and Guaranteed Income Supplement (GIS). For men, the OAS/GIS represented only 19% of their income.
- Women's retirement pension income has risen because of their increased labour force attachment. Yet, although their years of service, earnings, and participation in pension plans have become increasingly similar to men's, considerable differences persist.
- Women still spend, on average, more time per week than men on unpaid work: 38 hours versus 22 for those aged 35 to 44. This naturally affects the time they have available for paid work (27 hours versus 43 for men in this age group) and, ultimately, their current and retirement incomes.

■ **In for the long term: pension plans offered by employers** ... p. 18

- Over 5 million Canadian employees belonged to an employer- or union-sponsored pension plan in 1998. The total assets of these plans, also known as registered pension plans (RPP), exceeded \$644 billion, much more than those of the public Canada and Quebec Pension Plans and individual registered retirement savings plans combined.
- One form of RPP, the "trusteed pension fund," has had great success investing contributions in the stock and bond markets. Investment income from these sources grew from \$1.6 billion in 1976 to \$20.5 billion in 1998, a more than 12-fold increase. The income from these investments now far exceeds the combined value of employer and employee contributions.
- Trusteed pension fund managers also buy and sell stocks. The industry as a whole has shown a net profit from these transactions for many years, and since 1990 the amounts have grown significantly, reaching \$23.5 billion in 1998.
- Fund managers are legally obliged to ensure benefits for future retirees. The asset mix and investment strategies they adopted in the 1990s virtually guarantee that this obligation will be met.

■ **Incomes of seniors** ... p. 23

- During the 1980s, average real incomes among the population aged 65 and over increased 10%, a gain that went largely to seniors at the lower end of the income distribution.

- Among the one-fifth of seniors with the lowest incomes, disposable income rose 31% between 1980 and 1990, compared with only 1% among the one-fifth of seniors with the highest incomes.
- For seniors at the lowest income level, the changes were a direct result of higher benefits from three income sources: Old Age Security, the Guaranteed Income Supplement and the Canada and Quebec Pension Plans (C/QPP). For most seniors, the greatest source of income growth in the 1980s was C/QPP benefits, followed by private pension income.
- The C/QPP was introduced in 1966, but it was not until 1976 that the first people to receive full benefits reached age 65. At the outset of the 1980s, only the youngest seniors qualified for full benefits. This changed over the decade, and by the early 1990s retirement incomes showed the full effect of this income source.
- In 1980, 40% of seniors were in the lowest income group, compared with 20% of all Canadians. By 1995, their proportion in this category had fallen to 17%.

Income inequality within provinces

... p. 33

- In 1998, for every dollar of market income (income before taxes and government transfers) for the 20% of economic families with the lowest incomes, the 20% with the highest incomes had, on average, \$14.50. When the comparison is based on after-tax income, the inequality ratio was only \$5.40.
- At both the national and provincial level, the inequality ratio was highest for market income and lowest for after-tax income for every year between 1980 and 1998.
- In 1998, Prince Edward Island had the smallest inequality ratio for after-tax income, while Alberta had the largest.
- From 1980 to 1998, the gap between the province with the lowest ratio for total income (income before taxes but after government transfers) and

the one with the highest grew from 1.40 to 2.20, while the gap for after-tax income edged up from 1.10 to 1.90.

- Inequalities in market income tended to increase. The other two income measures reveal a similar tendency—though on a smaller scale—for the majority of provinces.

What's new?

... p. 39

Just released

Women in Canada 2000

Market Research Handbook

Social Policy Simulation Database and Model: Version 8.0

Registered apprenticeship training, 1998

Pilot Survey of Information Technology Occupations, 2000

Economic Overview of Farm Incomes

Aquaculture statistics, 1999 (preliminary)

Federal electoral districts

Family Income

Seniors Income

Neighbourhood Income and Demographics

Labour Force Income Profile

Economic Dependency Profile

Postal Area Profiles, 1998

RRSP Contributors

Canadian Taxfilers

"An overview of average wages and wage distributions in the late 1990s" *Labour Force Update*

"New hirings and permanent separations, 1999" *Labour Force Update*

Employment Insurance data

Spending Patterns in Canada, 1998

Pension Plans in Canada: Statistical Highlights and Key Tables, January 1, 1999

Pension Coverage and Retirement Savings of Young and Prime-aged Workers in Canada: 1986-1997

User Guide to 1996 Census Income Data

Should the Low Income Cutoffs be Updated? A Summary of Feedback on Statistics Canada's Discussion Paper

Perspectives

In the works

Some of the topics in upcoming issues

■ Year-end review

A wrap-up of changes and trends in the labour market in 2000. This popular annual feature makes its return to *Perspectives* in the January online issue.

■ Adjusting family incomes for family size and characteristics

This article applies equivalence scales to after-tax family income data for the 1980s and 1990s to explore the question, "what effect do family size and composition have on economic well-being and what are the related trends?"

■ Labour force participation: cross-sectional and longitudinal perspectives

This article looks at the demographic and economic factors that will affect public pension plans over the coming years. It shows how the 1990s labour market deviated from those of previous decades, and considers whether these changes are likely to persist. Some longitudinal data are available to test hypotheses usually subjected to synthetic cohort analysis.

■ Economic integration of recent immigrants

Using the Census of Population, supplemented by the longitudinal Immigration Database, this article compares the employment rates, education-to-occupation match rates and employment incomes of recent immigrants and Canadian-born university graduates.

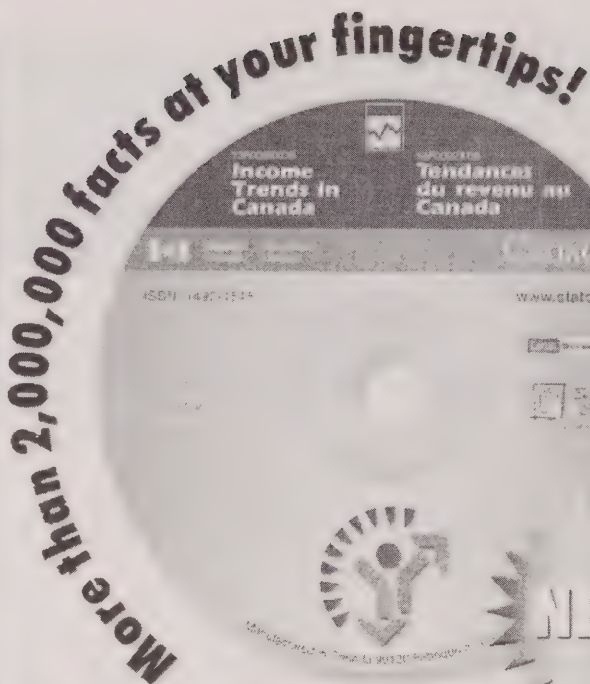
■ Recent trends in rural employment

This article provides a regional comparison of recent labour market trends in rural areas. To put the trends into a broader context, the cross-sectional labour market characteristics of these areas are also presented.

PERSPECTIVES ON LABOUR AND INCOME

The quarterly for labour market and income information

Income Trends in Canada



Get the overall picture with nearly two decades of data for Canada, the provinces and 15 metropolitan areas

For \$195, you will find everything you need to know about income trends covering 1980 to 1997, through two recessions and recovery periods! Get accurate and reliable statistics about:

- income from employment... and other sources
- taxes
- impact of government transfers on family income
- differences in earnings between women and men
- income of Canada's seniors
- income inequality and low income
- and a lot more!

In these times of budget challenges, it is more crucial than ever before to understand income trends of Canadians

With *Income Trends in Canada*, tracking and understanding developments in Canadian incomes is easy!

Use this CD-ROM to view trends with one mouse click. Create your own tables. Chart income data. And more!

Need more details? Check out *Income Trends in Canada* on our Web site at <http://www.statcan.ca/english/ads/13F0022XCB/index.htm> or contact your nearest Statistics Canada Regional Reference Centre at 1 800 263-1136.



Order *Income Trends in Canada* TODAY

(catalogue number 13F0022XCB) for \$195. In Canada, please add **either** GST and applicable PST **or** HST. Shipping and handling outside Canada: For shipments to the United States, please add \$6. For shipments to other countries, please add \$10. To order, CALL 1 800 267-6677, FAX 1 877 287-4369 or MAIL: Statistics Canada, Circulation Management, Dissemination Division, 120 Parkdale Avenue, Ottawa, Ontario, Canada, K1A 0T6. You may also order by E-MAIL: order@statcan.ca.

Incomes of younger retired women: the past 30 years

Katherine Marshall

Like many OECD countries, Canada is going through a demographic transition. With rising life expectancy and lower fertility and net migration rates, the proportion of the population in older age groups continues to grow. The trend toward earlier retirement, coupled with increased life expectancy, has greatly extended the period of retirement, making the issue of pre-retirement financial planning more crucial than ever.

These trends have put increased financial pressure on public retirement-income security programs. Concern over these programs has led to a fundamental change in social policy regarding retirement, in which the role of government is being reduced and the responsibility for the provision of retirement income gradually transferred to the individual. This view of retirement encourages people to become more self-reliant through employer-sponsored pension plans, tax-sheltered investment accounts, and other investments. This raises concerns for elderly women who, compared with men, have traditionally had lower average incomes and have relied heavily on income from universal old-age transfer payments.

Furthermore, the ability to become "self-reliant" assumes strong labour force attachment and sufficient earnings prior to retirement, as most pension plan benefits are dependent on previous earnings and length of service, and contributions to tax-sheltered investment plans depend largely on how much a person can afford to set aside. Even though the labour force experiences of women and men are more similar today, considerable differences persist—differences attributable to women's primary role in caring for the household. As a consequence, it can be assumed that most women will have lower non-government retirement income than men.

Katherine Marshall is with the Labour and Household Surveys Analysis Division. She can be reached at (613) 951-6890 or marskat@statcan.ca.

This article examines the extent of change in the source, distribution and level of individual incomes of younger retired women (and men) that has resulted from the development and maturation of public and private pension plans. The younger retired (aged 65 to 69) are examined, since they represent the most recently retired and therefore the most affected by relatively recent changes to pension plan benefits and other determinants of retirement income. As the elderly of the future, their initial retirement incomes are likely to persist.¹ In other words, 65-to-69 year-olds can be viewed as the flow into the stock of retired persons. Trends in the incomes of this age group are, therefore, somewhat predictive of trends in the future incomes of the population aged 65 and over.

The article also examines the long-term change in women's labour force involvement (including participation, earnings and pension coverage) as one of the reasons for the reduction of differences between the incomes of elderly women and men. As well, it discusses how both future labour market changes for women and current social roles may eventually affect women's retirement income.

This study analyzes the incomes of *individuals* and, with the exception of the section on low incomes, makes no reference to the incomes of the people with whom they may live. For those who live in families, individual incomes are not indicative of their standard of living or economic well-being, since that is a function of family income (that is, the sum of individual incomes of those who make up the family).

Individual incomes are used here to show how past trends have influenced the relative incomes of individual men and women aged 65 to 69, and how the incomes of those in this age group will influence the relative incomes of older age groups as the former continue to age. Individual incomes of persons aged 65 to 69 tend to be stable over time. Family incomes are unstable. The death of a spouse, particularly the

one with the higher income, will often have a dramatic effect on the surviving spouse's standard of living. But it will not lower that person's individual income. (In cases of retirement income sources with survivor's benefits, it may even increase it.) This means, for example, that a woman's income at age 65 to 69 is indicative of her income many years later when, given the differences in life expectancy between men and women, the probability of widowhood is much greater and a decline in standard of living may occur.

Overview of income sources

The income of elderly Canadians is derived mainly from three broad sources, often described as tiered:

First tier: OAS and GIS

Introduced in 1952, Old Age Security (OAS), in conjunction with the Guaranteed Income Supplement (GIS), is a government income security program designed to provide a basic guaranteed income to all Canadians. It is available to all citizens aged 65 and over who meet certain residency requirements, regardless of past labour force involvement. OAS provides a monthly flat-rate benefit fully indexed to the Consumer Price Index. The benefits began being taxed in 1989 (Myles, 2000); since then, persons with higher incomes have had to repay all or part of this income.²

The GIS, which began in 1967, is an income-tested supplement intended for those 65 and over with low income levels, which includes many who rely almost solely on OAS. A Spouse's Allowance was introduced in 1975 as another income supplement for those with limited income.³ Neither of these government supplements is taxable and neither requires previous contributions. Provincial governments also provide supplemental income programs for elderly persons with low income, although these are small relative to the programs just described.

Second tier: C/QPP⁴

Since 1966, these government-sponsored social insurance plans have been aimed at providing workers with a certain level (roughly 25%) of previous earnings, up to a ceiling,⁵ after retirement. The plans provide mandatory coverage for all workers aged 18 and over, regardless of status (for example, full-time, part-time, employees or self-employed workers), and both employees and employers are required to contribute.⁶ Benefits are available to anyone aged 60 or over who has worked and contributed to the Canada and

Quebec Pension Plans (C/QPP),⁷ but the amount depends on the contributory period and annual average earnings during that period.

Third tier: Private savings

Employer-sponsored registered pension plans (RPP), also known as "private" pension plans to distinguish them from the C/QPP, have existed since the late 1800s but became widespread after the Second World War. They are provided to workers by some employers and unions and are designed to replace a proportion of previous earnings after retirement. Most RPPs require both the employee and employer to make contributions. Benefit rates are usually calculated as a fixed percentage of earnings for each year of service, and the formula is meant to replace approximately 60% to 70% of previous earnings for those with many years of service (Statistics Canada, 1996).⁸

Registered retirement savings plans (RRSP), introduced in 1957, were designed to provide individual workers with a tax incentive to save for retirement. The annual maximum workers could save has changed several times since 1957, but throughout the years the ceiling for those with RPPs has been lower than for those without. Since 1991, the plan has allowed taxpayers to contribute up to 18% of their annual earned income, and then to defer paying tax on the amount contributed and on any interest or capital gains earned.

Income

Source of income has altered for the elderly

The enhancement and maturation of public and private pension plans in Canada have resulted in changes to the type of income young retirees have received over the past 30 years. Although the incidence rate for receiving pension benefits has increased for both sexes, the rate for women, because of their relatively low involvement in the labour force, has been consistently lower than men's. For example, in 1992, after the C/QPP had been in existence for 25 years, 89% of men aged 65 to 69 were receiving retirement benefits from the plans, compared with only 66% of women (Chart A). However, because these plans are compulsory, and women's labour force participation has been increasing, the incidence rate for C/QPP benefits reached 76% for women in 1997 (up 10 percentage points). The rate for men increased to 91% (up 2 points).

Chart A: Despite improvements, proportionately fewer women receive pension benefits.


By 1997, some 50% of men and 25% of women aged 65 to 69 were receiving some income from a private pension.⁹ The proportion has increased for both sexes since 1971, but in contrast to the experience with the C/QPP, the difference between the two has not yet narrowed. One of the reasons for this may be the exclusion of most part-time workers (who are predominantly women) from RPPs until the 1980s (Statistics Canada, 1996).

... as has the distribution

The increasing incidence of receiving second- and third-tier type income (public and private pensions) has changed both the distribution of income sources and the total income for the recently retired (Table 1). Again, the effect of pension income has been more striking for men than for women. By 1997, private pension income had

Table 1: Total income* by source

	Men 65 to 69				Women 65 to 69			
	1971	1981	1991	1997	1971	1981	1991	1997
	%							
Total	100	100	100	100	100	100	100	100
OAS/GIS	20	18	18	19	51	40	34	34
C/QPP	3	13	17	20	2	10	17	22
Private pension	16	17	23	26	12	8	13	14
Investment income	19	21	12	7	20	27	20	12
Employment	38**	26	25	20	11**	10	10	11
Other transfers	4**	5	5	8	4**	5	6	7
	1997\$							
Average income (after tax)	22,000	24,000	24,600	23,300	8,900	12,800	14,300	14,200
Income ratio (women/men)					0.41	0.53	0.58	0.61

Source: Survey of Consumer Finances

* Based on before-tax income.

** Published data for 1971 collapse employment and other transfer income; this study has estimated the likely breakdown based on past trends.

become the main source of income for men aged 65 to 69 and represented 26% of the total, up from 16% in 1971. Private pension income for women represented just 14% of the total, only slightly more than it had in 1971 (12%).

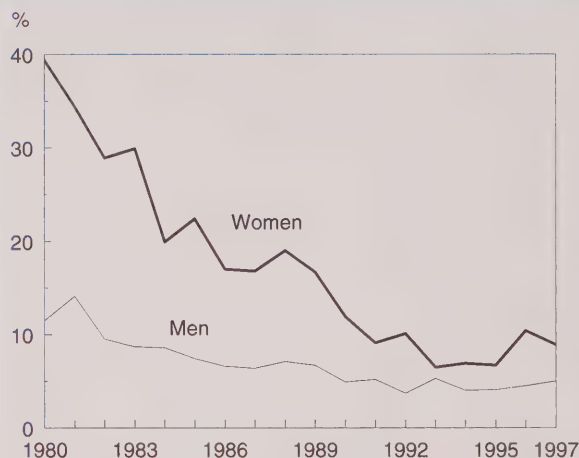
On the other hand, whereas C/QPP income was almost non-existent in 1971, it had come to represent one-fifth of income for both women and men by 1997. And, although reduced from 51% in 1971 to 34% in 1997, OAS/GIS remained women's main source of income. Equally noteworthy is men's decreased reliance on employment income, which had provided over one-third in 1971 but was down to one-fifth in 1997, reflecting declining labour force participation for this group.

The proportional increases in both private and public pension income have also helped to raise the total average income of women aged 65 to 69, from \$12,800 in 1981 (in 1997 dollars) to \$14,200 in 1997. The increased pension income for men has helped to offset the large decrease in employment income, though not enough to prevent a slight drop in their total average income from \$24,000 in 1981 to \$23,300 in 1997. Overall, women's income levels have moved toward those of men. For example, in 1971 women aged 65 to 69 received 41% of men's income; by 1981, the percentage had increased to 53% and by 1997, it reached 61%.

Living in low income

The narrowing of the income gap is reflected in the changing percentages of women and men with low incomes. Low income is based on *family* income rather than on *individual* income (studied everywhere else in this article). The incidence of low income is, therefore, a function not just of individual income, but, for persons living in families, of their combined (that is, family) income. In any case, in 1980 some 39% of women aged 65 to 69 were living in low income; that is, their after-tax family income was less than 50% of the median adjusted¹⁰ income of all families and unattached individuals regardless of age. This rate had decreased to 9% by 1997 (Chart B). Although the incidence of low income dropped for men aged 65 to 69 as well, the change was much smaller: from 11% to 5%.

Chart B: The incidence of low income* has dropped considerably for women aged 65 to 69.



Source: Survey of Consumer Finances

* Based on low income measures (one-half of median adjusted family income).

In short, the proportion of younger retired persons receiving public and private pension benefits has increased steadily since these income programs were introduced. Furthermore, these sources have come to represent a larger proportion of total income. However, the percentage receiving these pensions and the average annual amounts received have been consistently lower for women than for men. These differences narrowed somewhat during the late 1980s and the 1990s—a direct result of women's increasing involvement in the labour market. But what was the degree of labour force attachment of the women who retired during this period, and how does it compare with that of older and younger generations?

Labour force attachment

Participation rates converge

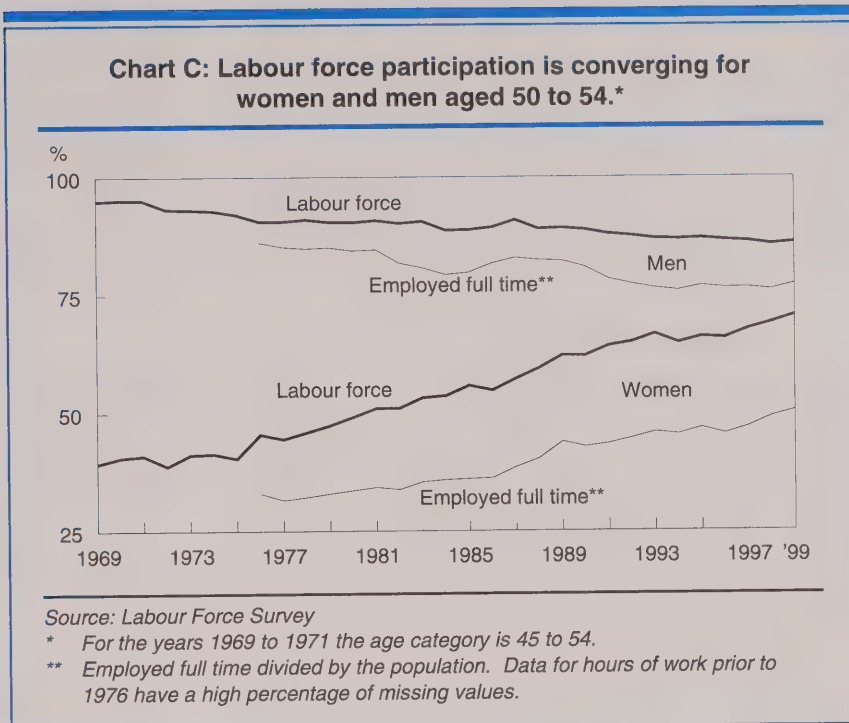
One method of examining the previous labour force attachment of several generations of younger retired women is to look at the employment behaviour of women over the years. For example, women who were aged 65 to 69 in 1999 would have been in their

pre-retirement years in 1984, when they were between 50 and 54. According to this form of analysis, 54% of women aged 65 to 69 in 1999 were in the labour force in their early fifties (Chart C). This compares with a participation rate of 89% for men aged 50 to 54 in 1984. Fifteen years earlier (1969), only 39% of women aged 50 to 54 were in the labour force; by 1999, a full 71% of this age group were participating. An opposite trend is revealed for men: whereas a full 95% aged 50 to 54 were in the labour force in 1969, only 86% of men in their early fifties were participating by 1999.

So, too, have full-time employment rates (in this study, full-time employment expressed as a proportion of the population in the same age group) dropped for men aged 50 to 54 and increased for women. That being said, men have consistently been more likely than women to work full time. As of 1999, their full-time employment rate was still considerably higher than women's: 77% versus 50%.

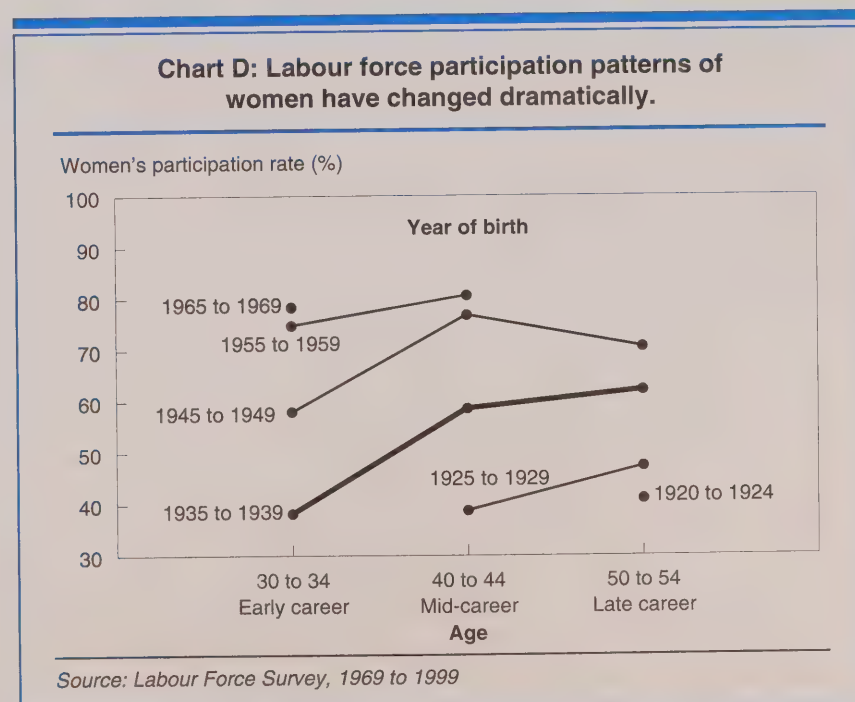
Women's participation now high throughout life cycle

Although a majority of women may now be participating in the labour force a decade before the traditional age of retirement, pension eligibility and earnings-replacement rates are generally dependent on lifetime years of service. A common pattern for women of earlier generations was to withdraw from the labour force through the child-rearing years, and then return to work once their children had grown up. Cohort analysis as a proxy for lifetime labour force participation rates confirms that rates have tended to rise as women age.¹¹ For almost all groups examined, labour force participa-



tion was lowest when the women were in their early thirties and highest when they were in their early fifties (Chart D).

Not only is the pre-retirement participation rate higher for the cohort born soon after World War II, but so too are the early and



mid-career rates of women from more recent generations. For example, only 39% of women born between 1925 and 1929 were participating in the labour force in their early forties, compared with 81% of women born between 1955 and 1959. Women today tend to have high labour force participation rates throughout their adult lives. For the women who retired in the late 1990s, labour force participation was strong only at the end of their working lives.

Earnings converge as well

Pension benefits are a function of both the number of years in which someone contributed to the plan and the earnings during the years when contributions were made. The data in the previous section suggest a steady increase in the number of years that women are potential contributors to pension plans, compared with a slight decline for men. This section looks at the earnings of women and men.

For a number of reasons not addressed here, women have consistently earned less than men. However, similar to the trend for labour force participation rates, the earnings gap between women and men narrowed over 30 years. In 1967, earnings of women working full year full time were 58% of men's, but had increased to 72% by 1997 (Chart E). Also, as seen earlier, not only do younger women now have higher-

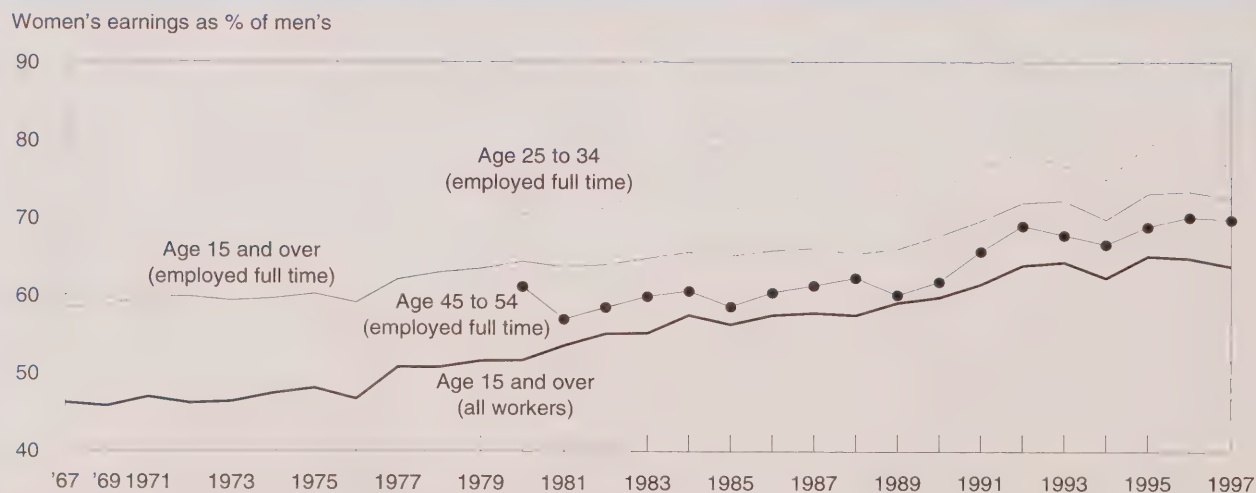
than-ever participation rates, but they have also made the largest gains in earned income relative to men's. For example, in the late 1990s women aged 25 to 34 working full year full time had earnings close to 80% of their male counterparts'. That said, full-time working women who retired in the late 1990s—the key interest group—were earning only around 60% of men's earnings during their pre-retirement years (aged 45 to 54 in the early 1980s).

Women's participation in private pensions increasing

In terms of average individual retirement incomes, the amount from pension schemes is a function of three variables: years of contribution, level of earnings while contributing, and the probability of having contributed at all. The third variable does not play a role in the case of the C/QPP, since coverage is effectively universal. However, private pensions are less inclusive, so the proportions of men and women participating in a private pension plan will have a bearing on the level (and composition) of *average* retirement incomes measured over the entire population.

More women now belong to an RPP, for two main reasons: their labour force participation has increased, and so too has their access to this benefit. In 1983, some 36% of women in paid jobs were members of

Chart E: Women's average earnings still lag men's.



Source: Survey of Consumer Finances

an RPP. This rate had increased to 39% by 1998 (Table 2). The employee coverage rate for women has grown largely because of revised legislation that has required employers with RPPs to include part-time workers. In contrast, the coverage rate for men dropped from 52% in 1983 to 42% in 1998. This can be attributed primarily to the proportional employment decreases in areas such as manufacturing and the public sector, industries that are more likely than others to offer RPPs.

Table 2: RPP coverage and RRSP contributions

Employees covered by an RPP			Taxfilers under age 65 who contributed to an RRSP, and median contribution			
Men Women			Men Women			
		%			% \$	% \$
1983	52	36	1994	37	2,800	27 2,000
1985	50	36	1995	38	2,800	30 2,000
1987	48	36	1996	39	3,000	31 2,000
1989	47	37	1997	39	3,000	32 2,100
1991	49	41	1998	40	2,900	30 2,000
1993	47	42				
1995	44	41				
1997	42	40				
1998	42	39				

Sources: *Census of Trusteed Pension Funds; Small Area and Administrative Data Division*

In the long term, retired women may be almost as likely as men to receive a pension from an RPP. However, given the differential earnings of women and men, the level of benefits will not be the same. This is because over 70% of all RPP members belong to plans that calculate pension benefits as a percentage of previous earnings. For the vast majority of these members, pensions are accrued at 2% for each year of service. That is, average annual pensions will equal 2% of earnings multiplied by the number of years of participation in the plan.

With regard to RRSPs, approximately 3 out of 10 women and 4 out of 10 men were making contributions by the end of the 1990s, with women putting away roughly two-thirds of men's savings (\$2,000 versus \$2,900 in 1998). As with RPP coverage, women's lower contribution rates and amounts have

been influenced by lower labour force participation rates and lower average earnings.¹² However, some women may benefit from RRSP rules allowing contributions to be made on behalf of lower earning spouses and claimed as tax deductions by the earners themselves.¹³ Although RRSP participation rates can be a useful indicator of retirement planning, lifetime accumulation levels are more important, albeit not currently known.¹⁴

Income, labour force attachment and social roles

For many of the key factors associated with pension benefits—number of years of labour force participation, level of earnings, and pension plan coverage—the experiences of women and men are becoming more similar. This confirms the sense that traditional roles of husband-as-breadwinner and wife-as-home-maker have been converging. Recent time-use data show that although work roles still tend to follow these lines, women, on average, are increasing their time spent on paid work, and men are increasing their time spent on housework, childcare and other unpaid work. However, despite a “blending” of the roles, women still carry most household and family responsibilities (Table 3), and this affects the time they have available for paid work, and ultimately, their economic success: “Even where women work outside the home, they generally carry the major responsibility for home and family. This has an impact on their career advancement and their earning capacity” (Townson, 1995). Therefore, given the continuing role distinction, it is

Table 3: Average work hours per week

Age		Total	Paid	Unpaid*
15 to 24	Men	31	22	9
	Women	34	18	17
35 to 44	Men	65	43	22
	Women	64	27	38
55 to 64	Men	46	23	23
	Women	47	13	34

Source: *General Social Survey, 1998*

* Comprises household work, shopping, childcare, social support and volunteer activities.

unlikely that women's and men's labour force attachment will match in the near future. This means retirement incomes will continue to differ as well, since the ability to save depends on level of earnings. Furthermore, pension benefits are dependent on total years of service and previous earnings; even though some RPPs take into account women's role in family responsibilities,¹⁵ most do not.

Conclusion

Younger retired Canadians are becoming more reliant on pension income and personal savings. For example, income from the Canada and Quebec Pension Plans and private pensions represented only 14% of total income for women aged 65 to 69 in 1971, and 19% for men. By 1997, the income from these sources had increased to 36% and 46%, respectively. However, despite some narrowing of the difference in the late 1980s and the 1990s, the percentage of women receiving pensions and the average amounts received remain considerably lower than those of men.

The narrowing of the difference between women's and men's retirement income in the late 1990s can be attributed partly to the greater lifetime labour force attachment of recently retired women. The income difference will most likely continue to diminish in the future because of the even stronger labour force involvement of young women today. However, given that women are still predominantly responsible for most household and family work, it would be unrealistic to expect their lifetime attachment to equal that of men, at least for some time. Therefore, it is also unlikely that women's and men's retirement income will converge completely.

Perspectives

Notes

1 The extent to which initial retirement incomes persist is largely a function of source of income. Indexed pension plans (public or private) will preserve the purchasing power of income received at age 65 to 69, as will indexed government transfer payments. The value of private pension plans with fixed benefits will be eroded by inflation. Investment income, to the extent that it comes from interest payments, will tend to vary according to the prevailing interest rate.

2 More recently, the amount paid under OAS in any one year is based on the previous year's income. This has the same general effect as taxing the benefit after it is received.

3 This is available to persons 60 to 64 who are married to GIS recipients (or widow[er]s of former recipients).

4 The Quebec Pension Plan is administered by the province of Quebec but is viewed in this article as identical to the Canada Pension Plan, which operates in the other nine provinces and the three territories.

5 The ceiling is based on an estimate of average annual earnings and is updated regularly.

6 The self-employed must pay both the employee and employer share of C/QPP contributions.

7 In order to be eligible for benefits, the CPP requires at least one payment, while the QPP requires contributions for a minimum of one year.

8 In many cases, employer-sponsored pension plans have been "integrated" with the Canada and Quebec Pension Plans so that the earnings replacement ratio (say, 50%) is achieved through a combination of the plans' respective benefits.

9 Some women may have been receiving survivor's benefits, although the incidence of this was probably low for the 65-to-69 year group.

10 Income was adjusted for family size only.

11 Cohort analysis of cross-sectional data enables estimations of lifelong participation rates; however, it cannot tell about the movement of women into and out of the labour force, which is an important element when determining total years of service. Longitudinal data are needed to know the number and duration of work interruptions for women over the past 30 years.

12 While women as a group are less likely to contribute to an RRSP than men, this reflects the higher earnings of men. For both men and women, the higher the income the higher the RRSP participation rate. When disaggregated by income, at each income level women are more likely than men to be RRSP participants (Statistics Canada, 1999).

13 The practice of making spousal contributions is not widespread. In 1989, only 3.4% of RRSP contributors made some or all of their contribution in their spouses' names; 98% of these contributors were husbands (Frenken, 1991).

14 The 1999 Survey of Financial Security, to be released in December 2000, should provide important information on total RRSP savings. This survey will also provide the first review since 1984 of the amounts invested outside RRSPs and of the value of non-financial assets such as dwellings, both of which are important in the determination of economic well-being in retirement years.

15 The federal public service pension plan allows employees to take up to five years off for the "care and nurturing" of preschool-aged children; employees are then able to "buy back" these pensionable years of service when they return to work. The buy-back option is also available for other kinds of extended leave.

■ References

Frenken, H. "Women and RRSPs." *Perspectives on Labour and Income* (Statistics Canada, Catalogue no. 75-001-XPE) 3, no. 4 (Winter 1991): 8-13.

Myles, J. *The Maturation of Canada's Retirement Income System: Income Levels, Income Inequality and Low-income among the Elderly*. Catalogue no. 11F0019MPE, no. 147. Ottawa: Statistics Canada, 2000.

Oja, G. and R. Love. *Pensions and Incomes of the Elderly in Canada, 1971-1985*. Catalogue no. 13-588-XPB, no. 2. Ottawa: Statistics Canada, 1988.

Statistics Canada. *Pension Plans in Canada*. Catalogue no. 74-401-XIB. Ottawa, 1999.

---. *Retirement Savings Through RPPs and RRSPs, 1991 to 1997*. Catalogue no. 74F0002XPB. Ottawa, 1999.

---. *Earnings of Men and Women*. Catalogue no. 13-217-XPB. Ottawa, 1997.

---. *Canada's Retirement Income Programs: A Statistical Overview*. Catalogue no. 74-507-XPB. Ottawa, 1996.

Townson, M. *Women's Financial Futures: Mid-life Prospects for a Secure Retirement*. Ottawa: Canadian Advisory Council on the Status of Women, 1995.

In for the long term: pension plans offered by employers

Robert D. Anderson

Most people are familiar with some aspects of Canada's retirement income programs. The federal and Quebec governments are responsible for the Canada and Quebec Pension Plans (C/QPP), and the choices that the responsible ministers make are subject to legislative and public debate. Registered retirement savings plans (RRSP) are another well-known element of retirement planning.

People are less familiar with another form of retirement saving—the pension plans offered by many employers or unions—yet for millions of Canadians, benefits from these plans will be one of their main sources of retirement income. Money in these plans is invested in a wide range of financial and capital markets to ensure that benefits will be available to future retirees.

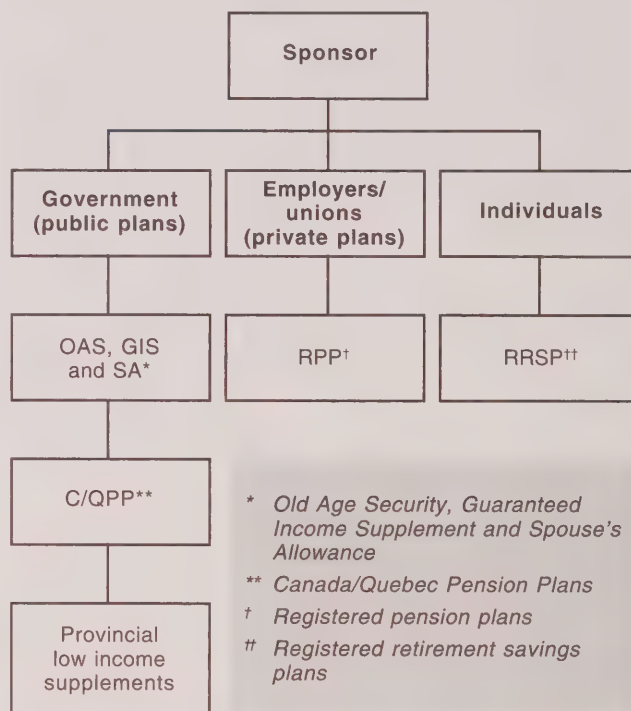
This article situates these pension plans within the context of the other major retirement income programs, and describes the investment strategy these plans follow.

Pension plans offered by employers or unions are frequently referred to as “private” pension plans to distinguish them from the public C/QPP (Figure). They are also called registered pension plans (RPP), as they must be registered with the Canada Customs and Revenue Agency (CCRA) and one of the pension supervisory authorities. These plans are provided by employers or unions in both the public and private sectors.

Relative importance of the programs

Two different pictures of the relative importance of the programs emerge, depending on whether they are viewed in terms of number of contributors, or value of assets¹ (Chart A). In terms of contributors, the public

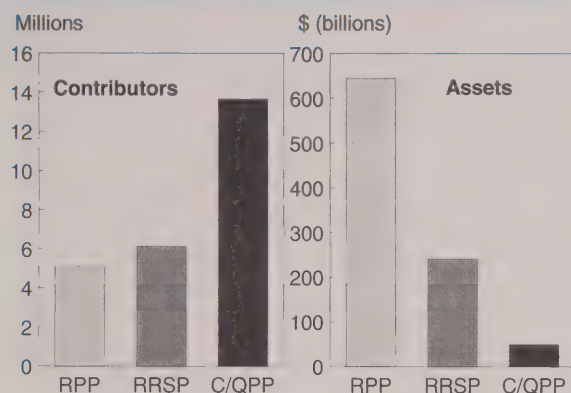
Figure: Retirement income programs



plans (C/QPP) are by far the largest, with 13.7 million persons having contributed in 1998. Public plans are compulsory for employed workers. Contributors to RRSPs numbered about 6.1 million, showing the popularity of these widely available retirement planning products. Finally, over 5 million persons were covered by RPPs.

When programs are viewed in terms of assets accumulated, however, another picture of their relative importance appears. The C/QPP—with the most contributors—had assets of under \$50 billion at the end of 1998, the least of the three programs. Assets accumulated in RRSPs amounted to \$241 billion, and those in registered pension plans—with the fewest contributors—reached \$644 billion.²

Robert D. Anderson is with the Income Statistics Division. He can be reached at (613) 951-4034 or robert.anderson@statcan.ca.

Chart A: Public plans have the most contributors; RPPs have the most assets.

Source: Census of Trusteed Pension Funds, 1998

The value of assets increased 138% for RPPs and 200% for RRSPs over the 1988-to-1998 period. In contrast, the combined assets in the C/QPP declined (Table).

Funding arrangements

The funds in RPPs are most commonly managed through a trust arrangement. Most of the remaining monies in these plans are held in consolidated revenue

arrangements administered by the federal and some provincial governments. They cover most federal public servants, the RCMP and the military. Insurance company contracts and Government of Canada annuities are also used by some RPPs, although these amounts are relatively small. What all registered pension plans have in common is their tax treatment by the CCRA: money going into the plans is not taxed, but benefits paid out are. The plans differ with respect to their funding arrangement, their terms and conditions, and their investment of funds.

A funding arrangement is defined through a legal document outlining the obligation of the funding agency (for example, trust company or insurance company) with respect to the pension plan. The instruments are registered with the appropriate pension authority and/or the CCRA. The terms of the plan specify, among other conditions, who is eligible or required to join the plan and who must pay contributions, what benefits are paid out and under what conditions, and how the funds' assets may be invested.

Like the C/QPP, many (though not all) RPPs require contributions from employees. "Contributory" plans cover about 73% of total RPP membership, including virtually all members of public sector plans. Non-contributory plans are offered almost exclusively by private sector employers.

Table: Accumulated assets in retirement income programs, at December 31

	1988		1990		1992		1994		1996		1998	
	\$ (billions)	%	\$ (billions)	%	\$ (billions)	%	\$ (billions)	%	\$ (billions)	%	\$ (billions)	%
Total	402.1	100.0	489.2	100.0	588.5	100.0	691.1	100.0	803.5	100.0	935.0	100.0
C/QPP	50.8	12.6	55.0	11.2	56.9	9.7	54.4	7.9	51.6	6.4	49.4	5.3
RPP	270.8	67.3	324.2	66.3	384.3	65.3	452.7	65.5	528.1	65.7	644.4	68.9
Trusteed	156.1	38.8	198.1	40.5	235.4	40.0	290.8	42.1	351.1	43.7	438.3	46.9
Government	86.3	21.5	95.0	19.4	112.8	19.2	121.6	17.6	137.0	17.0	160.7	17.2
Other*	28.3	7.0	31.1	6.4	36.1	6.1	40.4	5.8	40.0	5.0	45.4	4.9
RRSP**	80.5	20.0	110.1	22.5	147.3	25.0	184.0	26.6	223.8	27.9	241.2	25.8

Source: Census of Trusteed Pension Funds

Note: Dollar values are not adjusted for inflation.

* Insurance company contracts and Government of Canada annuities.

** Reserves in self-administered RRSPs are not included.

Fund investments

The assets of funds governed by a trust agreement (called "trusteed pension funds") are invested in the financial and capital markets. Until recently,³ the funds in consolidated revenue arrangements were not: employee contributions were part of general tax revenues and were not invested or set aside for future benefit pay-outs.

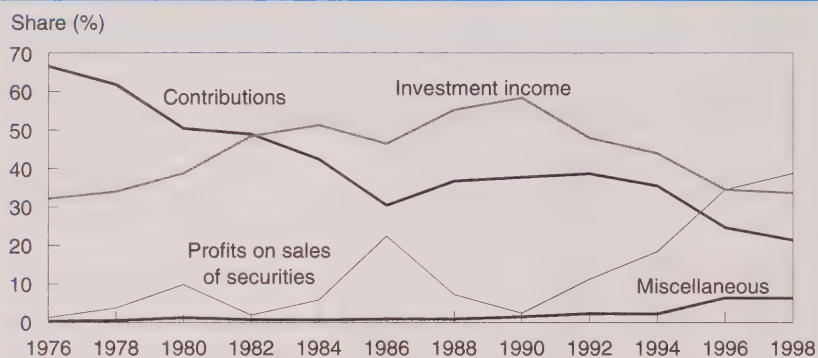
The remainder of this article focuses on trusteed pension funds, which represent 68% of all RPP assets. It is these funds that are invested in the financial and capital markets. Their growth explains most of the increase in the total value of RPPs.

The assets available from trusteed pension funds for investment in the financial markets topped \$438 billion in 1998. These funds have various sources of revenue in addition to employee and employer contributions: investment income from bond interest and stock dividends; profits from the sale of securities (stocks and other forms of equity investment); and real estate, mortgage and short-term investments. The importance of some of these sources has changed dramatically over time, reflecting varying economic forces and funding strategies (Chart B).

Perhaps the most notable change over the last two decades was the decline in the relative importance of contributions as a revenue source. That being said, contributions nearly quadrupled during the period under review (1976 to 1998), from \$3.4 billion to \$13.0 billion (Chart C).

The explanation for the decline in the relative importance of contributions lies in the more rapid increase of the other revenue

Chart B: For trusteed RPPs, the relative importance of revenue sources has changed significantly.

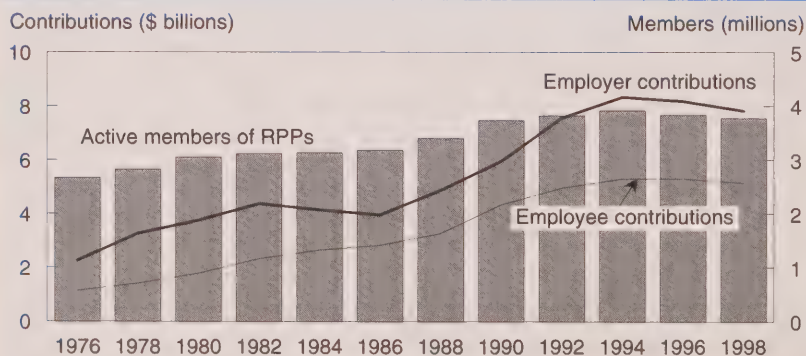


Source: Census of Trusteed Pension Funds

sources. For example, investment income (mostly bond interest and stock dividends) grew from \$1.6 billion in 1976 to \$20.5 billion in 1998, a more than 12-fold increase. It became the largest single source of revenue in 1983, exceeding employer and employee contributions combined. The value of investment income increased every year over the period except 1991, when it declined slightly.

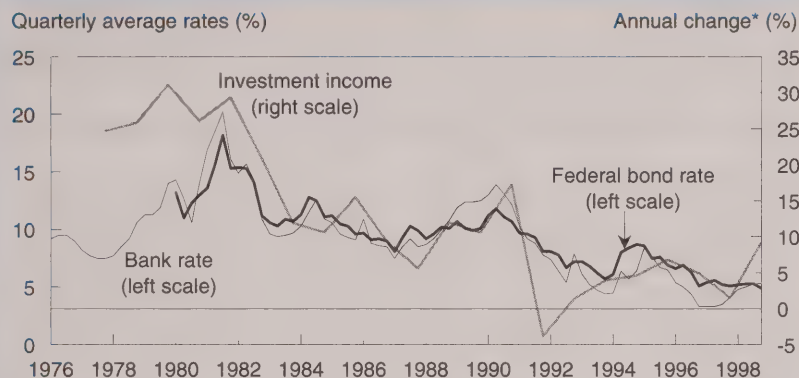
Investment income is closely related to bond yield rates, which tend to track bank rates. Thus, it increases more during periods of high bond yields than in years of low bond yields. For example, rising bond yield rates in the early 1980s led to large annual increases in investment income; conversely, falling bond yield rates throughout most of the remainder of the 1980s slowed the growth of the funds' investment income. In recent years

Chart C: Though their relative importance has declined, total contributions to trusteed RPPs have risen.



Source: Census of Trusteed Pension Funds

Chart D: For trustee RPPs, investment income is closely related to bond yield rates.



Sources: Quarterly Survey of Trusteed Pension Funds; CANSIM

* Fourth quarter over fourth quarter.

bond yield rates have been relatively low, dampening annual growth in the investment income of trustee pension funds (Chart D).

Trusteed pension fund managers also buy and sell stocks. The industry as a whole has shown a net profit from these transactions for all the years under review, and the amounts have grown significantly since 1990, reaching \$23.5 billion in 1998. A major turning point

occurred in 1996, when profits from the sale of securities (stocks) contributed the same amount (\$18.9 billion) to revenues as yields from investment income.

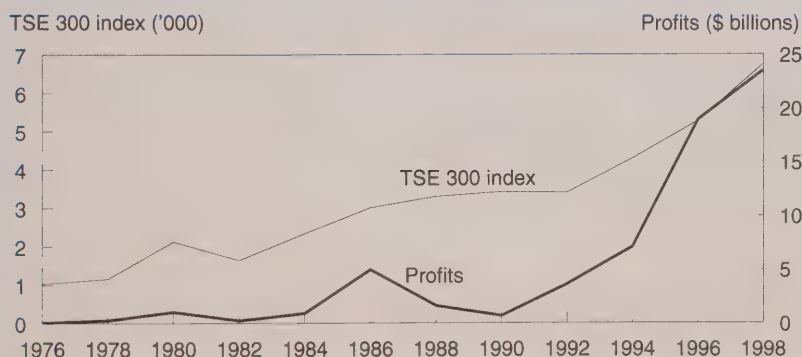
Security and growth

Trusteed pension fund managers are obliged by law to ensure that assets are not at risk. They must operate in a prudent manner in making investment decisions. Typi-

cally, a fund would have about 35%-to-40% of its assets in bonds, 35%-to-40% in stocks or pooled equity funds, and the remainder in cash, short term investments, real estate or mortgages. The allocation of the 35%-to-40% invested in the stock market requires a strategy specifically oriented to providing retirement benefits, because that is the financial objective of pension fund investment. One strategy for investing in the stock market is to match the composition of an index such as the TSE 300. In other words, a fund manager would purchase stocks in the communications, transportation, retail and other sectors in the same proportion as they are represented (weighted) in the index. This is because over the long term all major indexes have increased in value. However, the composition of the index also changes over time, meaning that the asset mix of the fund needs to be reviewed every few years. This strategy, among others, has been widely adopted by trustee pension fund managers.

QPP funds have for some time been invested in the financial and capital markets. Only recently, however, have monies in the CPP been directly invested in equities.

Chart E: If managers of trustee funds sell during periods of rising market indexes, profits rise.



Sources: Census of Trusteed Pension Funds; CANSIM

When to buy and sell

If fund managers decide to sell stocks to earn profits, the annual growth of these profits will track the annual growth of a stock market index (Chart E). Both the TSE 300 and the profits of the funds have been climbing steadily since 1992. By 1994, fund managers were selling off at a rapid rate to take advantage of rising stock prices. They would then re-invest the profits to buy, and then sell, more stocks.

Chart F: Trusted pension funds have always had a positive cash flow.



Source: Census of Trusted Pension Funds

These decisions to buy and sell are made over years, not days or months. Fund managers are not “market timers”; that is, they do not look for short-term gains or attempt to make profits on the day-to-day movement of stock prices, even though they may well be able to “afford” significant losses over a short term. Investing for retirement, whether by pension fund managers or by individuals, means being in for the long term, regardless of current market conditions such as unprofitable economic sectors or depressed overseas stock prices. The strategy of long-term investment in the stock market, combined with investment in the more traditional bond markets, is designed to provide the security that future beneficiaries require, while still providing growth in the value of fund assets.

Positive cash flow

The largest component of trusted pension fund expenditures is benefits to retired members. Further expenditures relate directly to managing the funds’ assets, namely, administration costs. Also, some sales of stocks incur losses. Nonetheless, the trusted pension fund sector has always had a positive cash flow—revenues have always far exceeded expenditures (Chart F).

Summary

Registered pension plans constitute, in terms of dollars, the largest component of the retirement income system. The largest proportion of the monies in RPPs is held in trusted pension funds and is actively invested in the financial markets. These investments have generated significant revenue for the funds. In the 1970s, revenues

from contributions were the driving force behind the growth in fund assets, followed by investment income during the high-interest period of the 1980s and early 1990s. In recent years, profits from the sale of stocks have taken over as the largest source of fund revenue.

Whether profits from the sale of stocks will continue to drive net income depends upon stock prices. Trusted pension fund managers are required by law to ensure the viability of the fund, so contributions and low-risk forms of investment income such as bond interest and stock dividends will remain major sources of fund revenues, providing a healthy cushion against stock market volatility and virtually guaranteeing retirement benefits for plan members.

Perspectives

Notes

- 1 The figures are for 1998, the latest available for all programs.
- 2 All dollar values are in current dollars (that is, unadjusted for inflation).
- 3 In April 1999, the CPP Investment Board began investing in an index fund composed of companies listed on the TSE 300.

Reference

Statistics Canada. *Trusted Pension Funds, Financial Statistics*. Catalogue no. 74-201-XPB. Ottawa, 2000.

Incomes of seniors

John Myles

Since the early 1980s, virtually every member of the Organisation for Economic Co-operation and Development (OECD) has undergone at least one major pension reform, a process far from over.¹ The pressures for reform are well known. Rapidly aging populations combined with slow economic growth have created an atmosphere of austerity very different from the expansion that characterized the 1950s through 1970s, when most contemporary old age security systems were designed. And seniors, once generally considered to be “too poor,” are now thought by some to have become “too rich” (relative to other groups).

Against this international backdrop, Canada's old age security system appears to have achieved an enviable position. Public expenditures on income security for seniors are modest by international standards and are projected to peak at levels well below those of most other Western nations this century.² Nevertheless, low income rates among Canadian seniors measured by the usual “relative” standard (persons with adjusted incomes less than 50% of the median) are now among the most moderate in the OECD, even when compared with egalitarian Sweden (Hauser, 1997; Smeeding and Sullivan, 1998).³

Moreover, this development is not simply an artifact of moving large numbers of seniors from just below to just above the income cutoffs. Seniors with lower incomes have gained substantially. Conversely, it would be extremely difficult to claim that Canadian

seniors have become “too rich.” Although mean incomes among older Canadians have risen considerably since the early 1980s, virtually all of the gains have taken place at the lower end of the income distribution. As a result, income inequality among Canadian seniors has fallen substantially since 1980.

These outcomes reveal a turnaround from a few decades ago, when Canadian seniors fared poorly by U.S. and other international standards.⁴ This article uses the Survey of Consumer Finances to review trends in the level and distribution of income among seniors (see *Data source and methodology*). It does so in the context of the main change in Canada's retirement income system over the period: the maturation of earnings-related pension schemes, both public and private. Between 1980 and 1996, income from contributory public and private earnings-related pensions rose from approximately 21% to 46% of disposable income among the population aged 65 and over. The share of income from Old Age Security (OAS) and the income-tested Guaranteed Income Supplement (GIS), in contrast, remained stable in the 1980s and declined slightly in the 1990s.

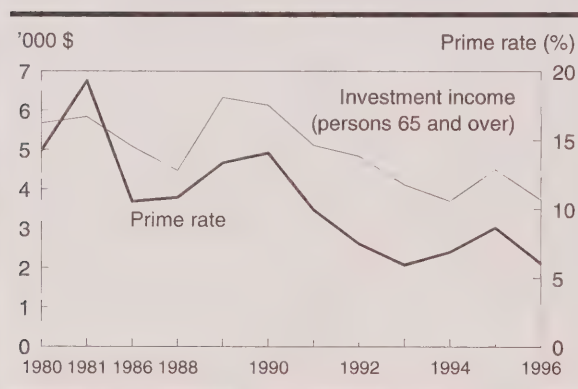
The expanded role of earnings-related pensions is the result of changes in the 1950s and 1960s. The Canada and Quebec Pension Plans (C/QPP) were implemented in 1966 and the first cohort to receive full C/QPP benefits turned 65 in 1976. The rising importance of C/QPP income since then is a result of cohort succession among seniors, as more recent cohorts displace older cohorts, and a dramatic increase in the share of women receiving their own C/QPP pension.⁸ Private pensions grew rapidly in the 1950s and 1960s, reaching a coverage rate for paid workers of 40% in 1970. Cohorts retiring as late as 1980 were unlikely to have significant contribution years (they entered the labour market in the 1930s and 1940s), but the average number of contribution years and coverage rates did rise as the decade proceeded, a trend noted over a decade ago (Oja and Love, 1988).

Adapted from The Maturation of Canada's Retirement Income System: Income Levels, Income Inequality and Low-Income among the Elderly, published by Statistics Canada (Catalogue no. 11F0019MPE, no. 147) and by the Canadian Journal on Aging (19, no.3: 287-316). John Myles is Professor of Sociology, Florida State University, and was Visiting Research Fellow with Statistics Canada's Business and Labour Market Analysis Division in 1998-99. He can be reached at jmyles@garnet.acns.fsu.edu.

Data source and methodology

Data are from the Survey of Consumer Finances economic family file for 1980, 1981, 1986 and 1988 through 1996. Inferring secular trends in the level and distribution of income requires careful consideration of effects associated with the business cycle. Among working-age families, the main concern is identifying points in the cycle when employment and unemployment levels are approximately the same. Among seniors, the main confounding cyclical factor is interest rates, which have a profound effect on investment income (Chart). Investment income was high at both the beginning and the end of the 1980s, when real interest rates were at their peak, and has declined since the early 1990s as interest rates have fallen. To identify secular trends, therefore, much of the analysis focuses on years in which interest rates were roughly similar. The years 1980 (prime rate = 14.25) and 1990 (prime rate = 14.06) are two comparable points. For the later period, 1991 and 1995 (with prime rates of 9.94 and 8.65, respectively) are used.

Investment income is closely tied to interest rates.



Sources: Survey of Consumer Finances; CANSIM

the ability of persons sharing accommodation and other living expenses to achieve a higher standard of living than they would if they were living on their own. Results can be highly sensitive to the choice of equivalence scale (Burkhauser, Smeeding and Merz, 1996). This is especially true for estimated differences between seniors living on their own (for example, unattached women) and elderly married couples and other persons living with family members. This study uses the "central variant" proposed by Wolfson and Evans (1990), which assigns a weight of 1.0 to the first person and 0.4 to each additional person. If one were to assume lower economies of scale (by assigning a weight of 0.6 or 0.8 to the second person, for example), differences between unattached and other seniors would be smaller than reported. All dollar values in the tables and text are expressed in 1996 currency.

The choice of the economic family as the income unit is appropriate for an analysis of the economic *welfare* of seniors, but this differs from an assessment of the economic *resources* of the group. The assumption is that seniors residing in higher income families enjoy a higher living standard than those in lower income families, irrespective of the source of that income. The results reported here reflect changes in seniors' living arrangements, as well as in the amount of income they receive from pensions, investments, and especially, earnings.⁵

Much of the analysis reports a single series for all seniors without distinguishing by family type. However, results are sometimes reported separately for unattached (single, widowed or divorced) women living on their own, traditionally seen as among the most economically vulnerable in this age group.⁶

This analysis uses disposable income, which is total income minus taxes. Total income comprises employment income (earnings), investment income, income from private pensions, C/QPP income, OAS/GIS income, and other government transfers.⁷ Taxes are shown as a component of disposable income because if they decrease, disposable income increases and vice versa.

Investment income includes dividends, interest, rental and estate income. Private pension income includes retirement pensions, annuities and superannuation. Ideally, income from registered retirement income funds should be separated from that generated by employer pensions. Because this is not possible for years prior to 1993, both kinds of income are included with private pension income.

As with the calculation of Statistics Canada's low income cutoffs, income is for the *economic family*, which includes all individuals sharing a common dwelling and related by blood, marriage or adoption. The unit of analysis, however, is the individual and includes all persons who were 65 or older in the reference years. Counting families (or households) rather than individuals would have given persons in larger households smaller weights than persons living on their own (Hauser, 1997).

Individual incomes are computed with the aid of an equivalence scale rather than with family income divided by family size. This accounts for economies of scale, that is,

Over the 1980s, rising incomes among older persons were related mainly to the growth in C/QPP benefits. Across most of the income distribution (the second through fifth quintiles), C/QPP benefits were uniformly distributed. These results, however, describe a particular moment in history, and it is unlikely that more recent trends will resemble those of the 1980s and early 1990s. The C/QPP was "rushed" to maturity by legislation that provided full benefits after only 10 years of contributions. The full effect of expanded coverage and rising benefits from employer-sponsored registered pension plans (RPP) and personal registered retirement savings plans (RRSP) will take longer to appear.

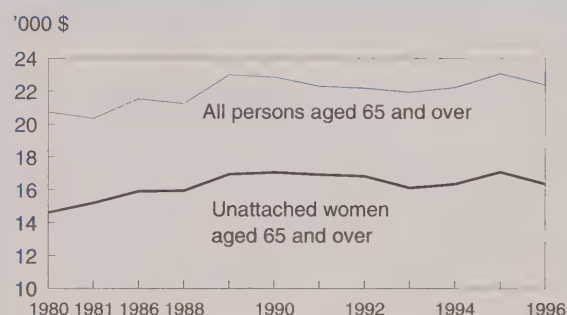
Declining income inequality since 1980 means simply that income gains among seniors, especially those financed by payroll and other taxes, have been directed disproportionately to persons in the bottom half of the income distribution. In Canada, as elsewhere, average incomes among seniors have risen faster in recent decades than average incomes among working-age families. This trend is due as much to slow real wage growth and falling relative wages among younger workers (under 35) as to rising pension income among older persons.⁹

Trends in income levels

Mean disposable (after-tax) income among seniors rose during the 1980s but was at roughly the same level in 1996 as in 1989 (Chart A). Over the intervals compared (1980 to 1990 and 1991 to 1995), mean disposable income rose 10% and 3%, respectively (Table 1).

The growth in average incomes reflects sharp increases in pension incomes, which more than offset declining earnings and rising taxes. Together, C/QPP

Chart A: Seniors' average disposable income rose in the 1980s, but stagnated in the early 1990s.



Source: Survey of Consumer Finances

Table 1: Changes in mean adjusted income by source, population 65 and over

	Disposable income	Employment income	Private pensions	Investment income	OAS/GIS	C/QPP	Other transfers	Taxes
1980 to 1990								
1980	20,740	6,110	2,650	5,680	\$ 5,940	1,700	760	-2,110
1990	22,870	4,450	4,330	6,140	6,560	3,720	1,030	-3,360
Change	2,140	-1,660	1,680	450	620	2,020	270	-1,250
% change	10	-27	64	8	10	119	35	59
Distribution								
1980	100.0	29.5	12.8	27.4	28.7	8.2	3.7	-10.2
1990	100.0	19.5	18.9	26.8	28.7	16.3	4.5	-14.7
1991 to 1995								
1991	22,310	5,070	4,250	5,120	\$ 6,540	3,670	1,080	-3,420
1995	23,080	4,580	5,660	4,500	6,330	4,530	1,100	-3,620
Change	780	-480	1,410	-610	-210	850	20	-200
% change	3	-10	33	-12	-3	23	2	6
Distribution								
1991	100.0	22.7	19.0	22.9	29.3	16.5	4.9	-15.3
1995	100.0	19.8	24.5	19.5	27.4	19.6	4.8	-15.7

Source: Survey of Consumer Finances

and private pension income rose from 21% of disposable income in 1980 to 44% in 1995. The largest gains were from C/QPP income (\$2,020) in the 1980s and private pensions (\$1,410) in the 1990s. Over the entire period (1980 to 1995), the share of private pension income doubled (from 13% to 25%), while that of C/QPP income more than doubled (from 8% to almost 20%).

OAS/GIS income rose in the 1980s (\$620) and then declined slightly (\$210) in the 1990s. Its share of disposable income fell slightly, from approximately 29% in 1980 to 27% in 1995. The changes reflect two offsetting trends: an increase in GIS benefits in 1984, and a growth in income from other sources (for example, pension income), which produced a drop in GIS benefits for seniors with low income (at the rate of 50 cents for each dollar of additional income from other sources).

Investment income was slightly higher (\$450) in 1990 than in 1980 but was substantially lower by 1995, reflecting the effect of changing interest rates, as well as a possible substitution of pensions for other forms of savings. One obvious implication of the growing relative importance of earnings-related pension income is its lower volatility, which signals greater security for seniors.

For this group, the share of earnings fell from about 30% to 20% of disposable income during the 1980s and remained at that level in the 1990s.¹⁰ Income taxes rose from about 10% of total income in 1980 to almost 16% by 1995, reflecting both rising incomes and changing tax provisions (including the OAS "clawback" implemented in 1989).

Unattached women

"Unattached" women (widowed, divorced or single women living on their own) have long been among the more economically vulnerable seniors. Average disposable income of this population grew somewhat more (17%) between 1980 and 1995 (Table 2) than it did among all seniors (11%).

C/QPP benefits played the dominant role in this increase. Such income rose from 8% to 16% of these women's total income between 1980 and 1990 and to 23% in 1995. Private pensions grew from 12% to 22% over the entire period. Among women reporting these benefits, many may have been receiving survivor's benefits.

While trends among unattached women are often used as indicators of what is happening to the most economically vulnerable seniors, this population is not homogeneous. The following section examines changes among seniors with lower and higher incomes.

Table 2: Changes in mean adjusted income by source, unattached women 65 and over

	Disposable income	Employ- ment income	Private pensions	Investment income	OAS/GIS	C/QPP	Other transfers	Taxes
1980 to 1990					\$			
1980	14,630	980	1,690	4,820	6,150	1,230	530	-770
1990	17,060	600	2,420	5,130	7,040	2,750	910	-1,800
Change	2,430	-370	730	310	890	1,520	380	-1,030
% change	17	-38	43	6	14	124	72	133
Distribution					%			
1980	100.0	6.7	11.6	32.9	42.0	8.4	3.6	-5.3
1990	100.0	3.5	14.2	30.0	41.3	16.1	5.4	-10.5
1991 to 1995					\$			
1991	16,940	510	2,670	4,800	6,950	2,920	930	-1,840
1995	17,080	520	3,750	3,270	6,770	3,880	850	-1,960
Change	150	10	1,080	-1,520	-180	950	-80	-120
% change	1	2	41	-32	-3	33	-9	6
Distribution					%			
1991	100.0	3.0	15.7	28.3	41.0	17.3	5.5	-10.9
1995	100.0	3.0	21.9	19.2	39.6	22.7	5.0	-11.5

Source: Survey of Consumer Finances

Trends in inequality

Income inequality as measured by the Gini¹¹ coefficient (Chart B) declined substantially over the 1980s (from .325 in 1980 to .274 in 1990), stabilizing at a slightly lower level in the mid-1990s (.266 in 1995).

Average incomes of seniors rose in all income quintiles during the 1980s but gains were inversely related to income level, rising by 31% in the lowest quintile, less than 10% in the fourth quintile and only 1% in the top quintile (Table 3). Both absolute and relative changes in the 1990s were considerably more modest.

Chart B: Inequality in adjusted disposable income among persons 65 and over declined substantially.



Source: Survey of Consumer Finances

* See note 11.

Table 3: Mean adjusted disposable income by income quintile, population 65 and over

Quintile	1980	1990	1991	1995
\$				
Bottom	8,810	11,570	11,770	12,280
Second	12,490	15,190	14,990	15,550
Third	16,330	19,070	18,290	19,330
Fourth	23,670	25,810	24,580	25,330
Top	42,390	42,720	41,920	42,930
Change				
1980 to 1990		1991 to 1995		
	\$	%	\$	%
Bottom	2,770	31	510	4
Second	2,700	22	550	4
Third	2,740	17	1,040	6
Fourth	2,140	9	750	3
Top	330	1	1,020	2

Source: Survey of Consumer Finances

significantly offset by lower GIS benefits that, by design, are reduced as other income rises. Private pensions grew faster than C/QPP in the 1990s, mainly benefiting the higher quintiles.

Low (and high) income trends

Rising incomes and declining low income rates among seniors have occurred in most OECD countries since the end of the 1960s, reversing the trend of the previous two decades. Following the Second World War, the economic status of this group fell relative to the working-age population, for at least two reasons. First, the rapid postwar decline in labour force participation among men 65 and over took place in a context of relatively underdeveloped old age pension systems. Second, working-age families were enjoying unprecedented increases in wages and earnings. In effect, seniors missed the rising tide of postwar expansion. By the mid-1960s, poverty within this group was a major concern, and old age pensions underwent a major round of legislative reform (Myles, 1989). The results of reform were evident sooner in some countries than in others. In the mid-1970s, low income rates among Canadian seniors were still well above those of their U.S. counterparts (Myles and Quadagno, 1994; Smeeding and Sullivan, 1998).

In the 1980s, rising incomes in the lowest quintile reflected a substantial increase in OAS/GIS benefits (\$2,000) and C/QPP income (\$850) (Table 4). In the second through fourth quintiles, C/QPP benefits were the largest source of rising incomes. Increases in C/QPP benefits were similar in the second through fifth quintiles, ranging from \$2,090 to \$2,590. Falling employment income in the fourth and fifth quintiles was more than offset by significantly higher private pension and C/QPP income and by higher investment income in the fifth quintile. But these gains were reduced and almost entirely offset in the latter by sharply higher taxes (which by 1990 included the "clawback" of OAS benefits).

Real income gains in the 1990s were comparatively modest in all quintiles. Higher C/QPP benefits favoured lower income households, but the gains were

Table 4: Mean adjusted income by source and income quintile, population 65 and over

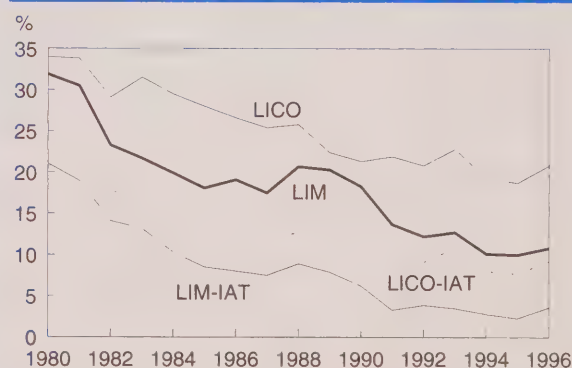
Quintile	Disposable income	Employment income	Private pensions	Investment income	OAS/GIS	C/QPP	Other transfers	Taxes
\$								
Bottom								
1980	8,810	120	230	670	6,430	670	720	-40
1990	11,570	110	220	600	8,440	1,510	940	-250
Change	2,770	-13	-16	-61	2,000	850	220	-220
Second								
1980	12,490	440	680	1,760	7,430	1,360	860	-50
1990	15,190	450	1,000	1,960	7,690	3,450	940	-290
Change	2,700	16	310	190	250	2,090	80	-240
Third								
1980	16,330	2,540	1,770	3,300	6,160	2,080	860	-370
1990	19,070	2,070	3,070	3,900	6,030	4,230	1,080	-1,310
Change	2,740	-460	1,290	600	-130	2,160	220	-950
Fourth								
1980	23,670	7,470	3,610	6,580	5,030	2,050	740	-1,810
1990	25,810	5,930	5,780	6,670	5,420	4,640	1,060	-3,690
Change	2,140	-1,540	2,160	91	400	2,590	320	-1,880
Top								
1980	42,390	19,990	6,940	16,100	4,670	2,330	630	-8,270
1990	42,720	13,710	11,610	17,550	5,240	4,750	1,110	-11,240
Change	330	-6,280	4,670	1,440	570	2,420	480	-2,970

Source: Survey of Consumer Finances

Two common measures of low income are Statistics Canada's low income measure (LIM) and low income cutoff (LICO). LIMs are purely relative measures calculated by estimating the percentage of the population belonging to families with less than 50% of the median income for all families. One is based on pre-tax income (LIM) and the other, on post-tax income (LIM-IAT). The latter cutoff corresponds to the standard used in the international comparative studies noted earlier. By this criterion, low income among seniors had virtually disappeared in Canada by the mid-1990s (Chart C).

Statistics Canada's low income cutoffs are the more familiar standard in Canadian discussions of low income levels. As with the LIMs, two series are calculated: before (LICO) and after (LICO-IAT) taxes. LICOs are based on an estimate of the percentage of income the average family spends on necessities (food, clothing and shelter). Since proportional expenditures on necessities decline as income rises, families who spend significantly more than average (more than 20%) are deemed to be in low income. The LICOs are rebased from time to time to take account of changes

in real living standards. Here, however, the 1992 base is used throughout, effectively treating the LICOs as "fixed" measures of low income.¹² In contrast, trends in living standards among seniors relative to those in the entire population are captured by the LIMs.

Chart C: Regardless of the measure used, low income rates among persons 65 and over have declined.

Source: Survey of Consumer Finances

Since most seniors with low incomes are clustered within a narrow income band, small differences in the choice of cutoff produce large differences in the percentage of the people who fall beneath it.¹³ Given the changes in taxation over the period, declines in the post-tax low income rates are much sharper than declines in the pre-tax rates. Trends in the LICO and the LICO-IAT show changes measured in real (constant 1996) dollars, while trends in the LIM and LIM-IAT are indicative of changes in the position of seniors relative to the population. LIMs tend to be counter-cyclical, since the incomes of older persons rise more slowly than those of younger families during periods of economic expansion (when labour market earnings are rising) and, conversely, decline much less than those of younger families during recessions, when earnings are falling. For the period as a whole, however, low income rates fell, and fell substantially, irrespective of cutoff.

The severity of low income among seniors also lessened over the period. Between 1980 and 1996, for example, the average "low income gap" (the income required to lift people above the cutoff, expressed as a percentage of the cutoff) within this group shrank from 26% to 19% (based on the LICO) or from 22% to 17% (based on the LICO-IAT). In short, the real living standards of seniors below the low income cutoff rose.

Given the design of the Canadian old age security system, it is entirely possible that low income trends are the product of the Guaranteed Income Supplement (GIS). Canada, unlike most nations, has a flexible income security system, owing to the introduction of the GIS in 1966. The GIS is designed as a negative income tax or, as the name indicates, a guaranteed income. In theory, the guarantee level may be such that all seniors with low incomes are concentrated in an income band just above the low income cutoffs. In that case, declining low income rates could be simply a reflection of this phenomenon.

Even when measured against the most generous cutoff (the LICO), however, this conclusion finds little support (Table 5). Declines in the LICO rate in the first half of the 1980s were achieved in this way. GIS benefits were raised in 1984 and by 1986, the LICO rate had fallen to about 27% from 33% in 1980, with virtually all of the change a result of an increase in the share of seniors just above the LICO. However, over the entire period this rate declined from 33% to 21% and the LICO-IAT rate, from 20% to 10%. About

Table 5: Income levels relative to low income cutoffs, population 65 and over

	1980	1986	1990	1996
	%			
Income relative to LICO				
< 1.0	33.4	26.6	21.3	20.8
1.0 – 1.5	25.4	30.9	28.0	29.4
1.5 – 3.0	29.9	31.9	36.4	35.2
3.0 +	11.3	10.6	14.3	14.6
Income relative to LICO-IAT				
< 1.0	20.1	12.9	10.3	9.6
1.0 – 1.5	26.0	29.9	25.1	26.8
1.5 – 3.0	38.2	44.3	47.9	48.3
3.0 +	15.8	12.8	16.7	15.3

Source: Survey of Consumer Finances

three-quarters of the change reflected in the former and all of the change in the latter was the result of an increase in the percentage of seniors whose incomes were at least one-and-a-half times their respective cutoffs.

How have seniors fared relatively?

In 1980, almost 40% of all seniors were in the bottom income quintile (Table 6), twice the rate of the population as a whole. By 1995, just over 17% were in this quintile, somewhat below the level (20%) of the entire population. Among unattached older women, the percentage in the bottom quintile fell from 70% to 42%. Approximately 80% of the total shift out of this quintile reflected movement into the second and third quintiles by seniors as a whole, and into the second by unattached older women. The proportion of seniors in the top two quintiles increased very little, however. In short, though seniors moved up significantly over the period, most did so from the bottom to the middle of the income distribution.

Conclusion

In the mid-1990s, the income retirement system that had been put in place in the 1960s appeared to have struck a delicate balance. By the standards of OECD countries, Canadian public expenditures on income security for seniors have been quite modest and are projected to peak at levels *well* below those expected

Table 6: The distribution of the elderly by income quintile

Quintile	1980	1990	1995
%			
Population 65+			
Bottom	39.7	25.2	17.5
Second	22.1	29.7	32.5
Third	12.2	16.2	20.0
Fourth	13.3	14.9	16.0
Top	12.8	13.9	14.0
Unattached women, 65+			
Bottom	69.5	53.4	42.0
Second	13.7	26.1	35.4
Third	5.6	9.1	11.1
Fourth	5.7	6.4	7.5
Top	5.6	5.0	4.0

Source: Survey of Consumer Finances

in most other Western nations this century (OECD, 1996). At the same time, low income rates among Canadian seniors have been brought down. These two facts capture the essence of the decline in income inequality among seniors since 1980: real incomes among seniors have risen, but most of the gains have gone to those at the lower end of the income distribution.

The relative status of seniors in any period is a result of what might be called generational overlap. The relative low income of seniors in the 1960s reflected the timing of their birth—too soon to reap the benefits of rising wages and pension benefits that came to younger cohorts with the postwar boom. They carried the economic scars of the depression years into old age at the very moment when working-age families were experiencing gains in real incomes not seen before or since. The relative gains in incomes of seniors since 1980 are, on the one hand, a product of their own biographies (the rising wages and better pensions that followed the war) and, on the other, the relative stagnation in wages and incomes of working-age families in more recent decades.

In the absence of legislative changes, projections based on current indexing provisions for OAS and GIS benefits suggest a substantial rise in low income rates among future seniors (Wolfson and Murphy, 1994).¹⁴ Nor should one expect future declines in

income *inequality* among older persons similar to that of the 1980s. Declining income inequality in that decade was the product of a large decline in earned income and a shift toward pension, especially C/QPP, income. In short, a source of income that is highly concentrated was falling, offset by a rapid increase in an income source with very low concentration. This was a period of transition that will probably not be repeated. The fall in earned income has a lower limit and the C/QPP is near maturity. The first decade of this century is more likely to see continued maturation of employer-sponsored pension plans and personal registered retirement savings plans.¹⁵ As these elements of the retirement income system are more highly concentrated among high-wage earners, the trend toward declining inequality among Canadian seniors will probably not continue indefinitely.

Perspectives

Notes

- 1 For a review and analysis of these reforms, see Myles and Pierson (forthcoming).
- 2 The Organisation for Economic Co-operation and Development projects that Canadian expenditures on public pensions will rise to 9% of GDP in 2040 from 5% in 1995 (OECD, 1996). In contrast, average expenditures in the continental European countries were 10% of GDP in 1995 and are projected to rise to 16% by 2040 (Myles and Pierson, forthcoming).
- 3 By the usual international standard, low income rates among Canadian seniors had fallen to about 5% in 1994, compared with a U.S. rate in excess of 20%. Among the population aged 70 and over, Canada's low income rate was below that of Sweden, the usual international "winner" in poverty reduction (Smeeding and Sullivan, 1998).
- 4 In the mid-1970s, low income rates among Canadian seniors were still well above those of their American peers (Myles and Quadagno, 1994; Smeeding and Sullivan, 1998). The first truly comparative studies of low income rates among seniors for the early 1980s placed Canada at the lower end internationally (Smeeding, Torrey and Rein, 1987).
- 5 Rising pension income may affect family earnings among seniors in two ways: it may reduce the labour supply of older persons, and it may reduce the propensity of older persons to reside with other family members (for example, adult children) who are in the labour force. The share of all seniors in the labour force declined from 10% in 1980 to 7% in 1995.

The share of those not in the labour force but residing with a family member who was a labour force participant declined from 19% to 17%. The percentage of older persons in families with no labour force participant present rose from 71% to 77%.

6 "Unattached" elderly women are a heterogeneous group. The incomes of never-married (single) women are closer to those of men than to those of widowed or divorced women. The effect of widowhood is an especially important (and complex) topic, which is not addressed here.

7 Since 1989, OAS benefits have been "clawed back" from seniors with high incomes.

8 Married persons in families receiving at least one C/QPP pension rose from 74% to 93% between 1980 and 1996, and the percentage in families receiving two C/QPP pensions, from 18% to 55%. Some 65% of couples also received at least one private pension by 1996, up from 45% in 1980. The percentage of unattached older women receiving a C/QPP benefit rose from 44% to 78% over the period; 39% were receiving a private pension in 1996, up from 29% in 1980.

9 Relative to the working-age population, average incomes among U.S. seniors are higher than among their Canadian counterparts. However, higher income inequality among U.S. seniors means that shares of seniors with high and low incomes are also larger in the United States. The reasons for those differences are complex, but reflect in part higher income inequality during the working years that is then carried forward into retirement, and less protection for seniors with low incomes.

10 About one-third of the decline in earnings could be explained by changes in the living arrangements of older persons, that is, by a change in the proportion of seniors residing with another family member who is a labour force participant. This is a maximum estimate since it takes account of compositional shifts only and does not include any behavioural response by seniors or other family members (for example, younger spouses or older adult children, who might reduce their labour supply in response to the higher pension income of the older person). Among all retired persons 65 and over residing with other family members still in the labour force, pension income was the only source of rising family incomes over the 1980-to-1995 period. As a result, total pension income in these families rose from 25% to 38% of disposable income.

11 The Gini coefficient can be used to derive an estimate of differences (for example, in income inequality among several groups) or of changes in inequality over time. This number lies between zero and one, denoting, respectively, total equality and total inequality.

12 The LICO is fixed at the 1996 levels, based on the 1992 revisions. Earnings are then computed in 1996 constant dollars, and the cutoffs applied to these earnings.

13 In 1996, the average LICO was approximately 56% of the median pre-tax income of all families, and the LICO-IAT, about 55% of median post-tax income. In effect, shifting from the pre-tax to the post-tax distribution cuts the low income rate of seniors in half. Moving from the LICO-IAT (55% of the median) to the LIM-IAT (50% of the median) cuts the low income rate in half again.

14 Paradoxically, this will not occur if future cohorts of workers experience very low real wage growth.

15 Recent declines in occupational pension coverage for younger men (Morissette and Drolet, 1999) may also affect future retirement incomes.

References

Burkhauser, R.V., T. M. Smeeding and J. Merz. "Relative inequality and poverty in Germany and the United States using alternative equivalence scales." *Review of Income and Wealth* 42, no.4 (December 1996): 381-400.

Hauser, R. *Adequacy and Poverty among the Retired*. Paris: Organisation for Economic Co-operation and Development, 1997.

Morissette, R. and M. Drolet. *The Evolution of Pension Coverage of Young and Prime-aged Workers in Canada*. Statistics Canada, Catalogue no. 11F0019MPE, no. 138. Ottawa, 1999.

Myles, J. *Old Age in the Welfare State: The Political Economy of Public Pensions* (rev. ed.). Lawrence, Kansas: University Press of Kansas, 1989.

Myles, J. and P. Pierson. "The comparative political economy of pension reform." In P. Pierson (ed.), *The New Politics of the Welfare State*. New York: Oxford University Press, forthcoming.

Myles, J. and J. Quadagno. "The politics of income security for the elderly in Canada and the United States: Explaining the difference." In T. Marmor and T. Smeeding (eds.), *Economic Security for the Elderly: North American Perspectives*. Washington, D.C.: Urban Institute Press, 1994.

Oja, G. and R. Love. *Pensions and Incomes of the Elderly in Canada, 1971-1985*. Catalogue no. 13-588-MPB, no. 2. Ottawa: Statistics Canada, 1988.

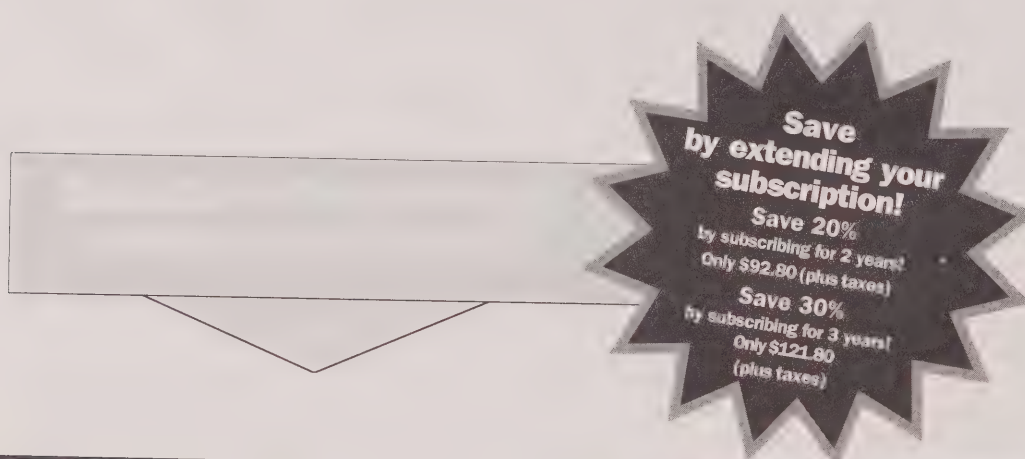
Organisation for Economic Co-operation and Development. *Ageing in OECD Countries: A Critical Policy Challenge*. Paris: OECD, 1996.

Smeeding, T. M. and D. H. Sullivan. *Generations and the Distribution of Economic Well-Being: A Cross-National View*. LIS Working Paper Series, no. 173. Luxembourg: CEPS-INSTEAD, 1998.

Smeeding, T. M., B. Torrey and M. Rein. *Patterns of Income and Poverty: The Economic Status of the Young and the Old in Eight Countries*. LIS Working Paper Series, no. 8. Luxembourg: CEPS-INSTEAD, 1987.

Wolfson, M.C. and J.M. Evans. *Statistics Canada's Low Income Cut-Offs: Methodological Concerns and Possibilities*. Discussion paper. Statistics Canada, Catalogue no. 72N0002E. Ottawa, 1990.

Wolfson, M.C. and B.B. Murphy. "Kinder and gentler: A comparative analysis of incomes of the elderly in Canada and the United States." In T.R. Marmor, T.M. Smeeding and V.L. Greene (eds.), *Economic Security and Intergenerational Justice: A Look at North America*. Washington, D.C.: Urban Institute Press, 1994.



MAIL Statistics Canada Circulation Management 120 Parkdale Avenue Ottawa, Ontario Canada K1A 0T6	PHONE 1 800 267-6677 Charge to VISA or MasterCard. Outside Canada and the U.S., and in the Ottawa area, call (613) 951-7277.	FAX 1 800 889-9734 (613) 951-1584	E-MAIL order@statcan.ca		
Please do not send confirmation for phone or fax orders.					
Name _____ Company _____ Department _____ Address _____ City _____ Province _____ Postal Code _____ Phone _____ Fax _____					
METHOD OF PAYMENT (Check only one) <input type="checkbox"/> Charge to my: <input type="checkbox"/> MasterCard <input type="checkbox"/> VISA Card Number _____ Authorized Signature _____ Expiry Date _____ Cardholder (Please print) _____ <input type="checkbox"/> Payment Enclosed \$ _____ <input type="checkbox"/> Purchase Order Number _____ Authorized Signature _____					
Catalogue No.	Title	Subscription	Price (CDN \$)	Quantity	Total CDN \$
75-001-XPE	Perspectives on Labour and Income	1 year	58.00		
		2 years	92.80		
		3 years	121.80		
		Subtotal			
		GST (7%) - (Canadian clients only, where applicable)			
		Applicable PST (Canadian clients only, where applicable)			
		Applicable HST (N.S., N.B., Nfld.)			
		Shipping charges U.S. CDN \$24, other countries CDN \$40			
		Grand Total			

ALL PRICES EXCLUDE SALES TAXES.
 Canadian clients add 7% GST and applicable PST or HST.
 GST # R121491807.
 Cheque or money order should be made payable to the Receiver General for Canada.
 PF 097042

Income inequality within provinces

Dimitri Sanga

Inequality of income distribution is a subject of continual debate. Canada is no less affected than other countries by this situation, whether at the national or provincial level. Public interest in this phenomenon is always high.

This article looks at the degree of inequality in the distribution of total income, market income and after-tax income within each province, and compares it with the degree of income inequality in the other provinces. The study does not consider which province has the highest or lowest average income, but which province has the most or the least inequality in its distribution of income. The article covers the years 1980 to 1998 (see *Data sources and definitions*).

The study does not attempt to determine the reasons for or sources of provincial inequalities, but rather to describe them and to see how they behave over time.

Studies that have addressed this issue so far seem to agree in most cases. All show differences in the degree of income inequality within the provinces. Some state that such differences between provinces have been shrinking since 1960. Others qualify their conclusions, arguing that it depends on how income is defined. Nevertheless, most seem to agree that inequalities in *earnings* have grown in the majority of provinces. Moreover, the trends observed are the same regardless of sex or age group (Finnie, 1998). Interprovincial variability indicators are higher for market income than for total income (Alter and Greenberg, 1990). The gaps are smaller, however, when the comparison is done with after-tax income. Thus, inequality tends to be reduced by taxes and government transfer payments, and increased by capital income.

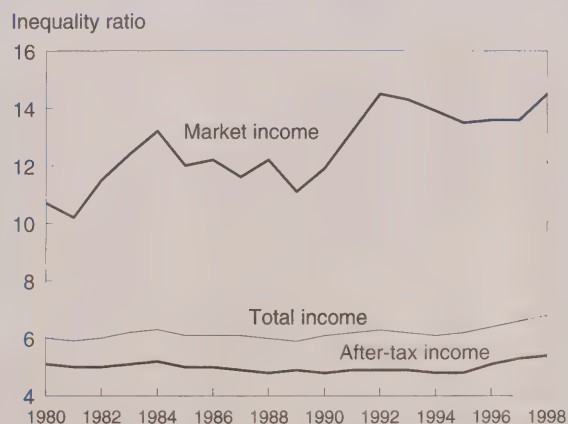
In this analysis, inequalities in family income distribution are examined by province using a straightforward approach based on upper and lower quintile

ratios. The family unit is treated as a whole, without regard for the presence or absence of children or for differences in the marital or labour market status of family members.

Gaps are widest for market income

In Canada, the inequality ratio was highest for market income and lowest for after-tax income for every year in the study period (Chart A). Inequalities are thus reduced by government transfer payments and income taxes. The gap in average market income between the upper and lower quintiles was at least twice as large as the average after-tax gap, regardless of the year. In 1998, for example, for every dollar of market income for the 20% of economic families with the lowest incomes, the 20% with the highest incomes had, on average, \$14.50. When the comparison is based on after-tax income, the difference was only \$5.40.

Chart A: Market income inequality has been higher than that of other income measures.



Sources: Survey of Consumer Finances; Survey of Labour and Income Dynamics

Dimitri Sanga is with the Prices Division. He can be reached at (613) 951-3116 or dimitri.sanga@statcan.ca.

Data sources and definitions

The data, from the Survey of Consumer Finances (SCF) and the Survey of Labour and Income Dynamics (SLID), cover 1980 to 1998. The SCF was an annual supplement to the Labour Force Survey until 1997. The recent publication of 1998 income data in the annual report *Income in Canada* (Statistics Canada, 1998) introduced SLID as the official source of annual data on income, replacing the SCF. This article uses SLID estimates for 1996, 1997 and 1998, as well as those of the SCF for 1980 to 1995. The latter have been revised to make them comparable.

Economic family: two or more persons who live in the same dwelling and are related to each other by blood, marriage, common law or adoption.

Market income: total earnings (from paid employment or self-employment), investment income, retirement income (private pension plan) and "other income." It excludes government transfers. It is also known as income before taxes and transfers.

Government transfers: all direct payments to individuals and families by the federal, provincial and municipal governments: Old Age Security pensions, the Guaranteed Income Supplement, Spouse's Allowance, Canada and Quebec Pension Plan benefits, Child Tax Benefits, Employment Insurance benefits, workers' compensation benefits, credits for the goods and services tax (GST) or the harmonized sales tax (HST), provincial or territorial tax credits, social assistance payments and other payments.

Total income: income from all sources before deduction of federal and provincial taxes. Total income is also known as income before taxes (but after transfers). It includes market income and government transfer payments.

Income tax: total federal and provincial taxes on income and capital gains in a given year.

After-tax income: total income minus income taxes.

Quintile ratios: Most studies of provincial differences have used either the coefficient of variation or the Gini coefficient as a measure of inequality. This study uses the ratio of the average income of the top quintile to that of the bottom quintile. (The income averages are adjusted with sample weights.) This same measure is used in analyses accompanying published estimates of income distribution derived from the SCF.

For all measures of income, quintiles are formed by ranking the families in ascending order of after-tax income and dividing the entire sample into five equal parts. The top quintile consists of the 20% of families with the highest after-tax incomes, and the bottom quintile, the 20% of families with the lowest incomes. Thus, the average market income of the top quintile is the average market income of families in the **top after-tax income quintile**. This method keeps the composition of each quintile constant.

The inequality ratio measures how much the families in the top income quintile have, on average, for every dollar of those in the bottom quintile. The higher the ratio the greater the gap in income distribution among the families. For example, a ratio of 5 means that, on average, for every dollar claimed by the 20% of families with the lowest incomes, the 20% with the highest incomes had \$5.

The inequality ratio for market income rose from 10.70 in 1980 to 14.50 in 1998. Most of the increase occurred during the recessions of the early 1980s and 1990s. The ratios for the other two income measures grew, but on a smaller scale: the total-income ratio edged up from 6.00 to 6.80 between 1980 and 1998, while the after-tax ratio shifted from 5.10 to 5.40. After remaining relatively stable in the early 1990s, they experienced a marked increase toward the latter half of the decade.

The findings for the various inequality ratios also apply provincially. Thus, for any year and any province, the inequality ratio was greatest for market income and smallest for after-tax income (Table), reflecting the effects of taxes and government transfers.

Inequality ratio varies by province

To compare income inequality by province, the study chose the provinces with the largest and smallest

gaps in after-tax income. After-tax income was chosen because that was the measure used to form the income quintiles on which the inequality ratios were based. Moreover, after-tax income is closer to disposable family income.

In 1998, Prince Edward Island had the smallest inequality ratio for after-tax income, while Alberta had the largest (Chart B). In Prince Edward Island, the 20% of families with the highest incomes had \$4.20 in after-tax income for every

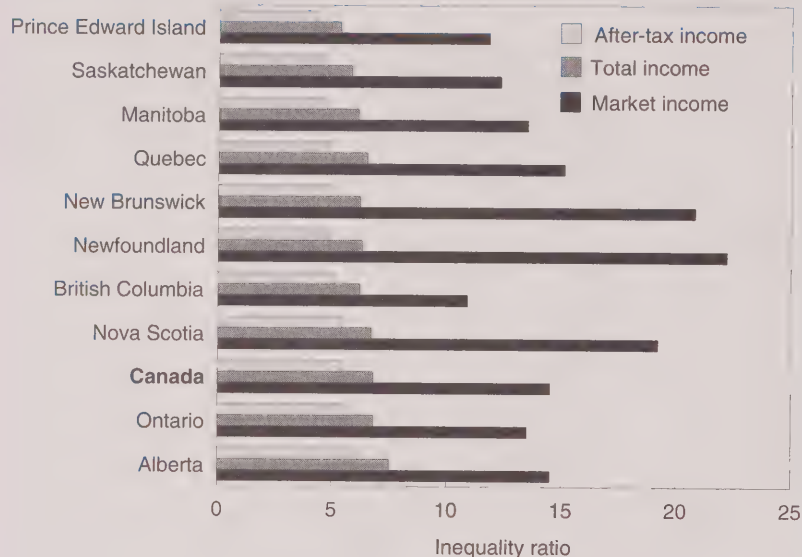
Table: Inequality ratios, by province

	Canada	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.
	\$										
Market income											
1980	10.70	16.00	9.30	11.80	13.10	13.00	8.80	10.70	9.40	8.90	9.10
1981	10.20	17.90	12.90	13.10	16.40	11.20	8.10	12.00	14.30	8.20	9.60
1982	11.50	17.60	12.70	13.80	18.80	11.70	9.50	12.20	12.50	9.20	13.40
1983	12.40	14.50	10.30	13.90	20.90	12.30	10.70	12.00	12.10	11.60	12.70
1984	13.20	18.50	11.50	15.80	17.30	14.90	10.50	11.00	15.30	12.60	13.90
1985	12.00	21.80	10.40	13.00	16.40	13.10	9.50	10.30	15.40	9.60	13.00
1986	12.20	16.60	11.20	16.00	15.30	13.60	9.50	11.40	15.80	9.80	13.10
1987	11.60	16.90	11.30	13.60	16.60	12.70	9.20	10.50	11.80	10.40	13.50
1988	12.20	16.30	10.30	13.80	15.20	14.20	9.30	12.00	13.10	10.90	11.40
1989	11.10	15.30	13.60	15.10	14.70	12.40	9.20	10.50	12.30	11.80	9.00
1990	11.90	16.90	12.20	13.20	13.80	13.20	9.70	10.90	12.90	10.70	12.60
1991	13.20	18.80	12.30	13.40	15.60	15.60	11.90	11.50	10.90	11.00	10.70
1992	14.50	22.40	9.80	15.60	16.40	14.20	14.00	12.90	13.50	12.90	11.90
1993	14.30	21.70	10.40	18.30	14.60	14.50	13.70	12.00	13.50	11.90	13.70
1994	13.90	20.50	9.50	15.90	16.20	15.40	13.30	10.90	13.00	9.80	12.20
1995	13.50	30.40*	11.30	14.30	16.40	14.70	12.50	10.50	12.20	9.50	12.40
1996	13.60	19.20	9.60	16.80	19.90	15.30	12.90	12.90	13.20	10.40	10.20
1997	13.60	20.50	11.80	15.20	20.50	14.10	12.80	12.80	11.70	10.10	10.60
1998	14.50	22.20	11.80	19.20	20.80	15.10	13.50	13.50	12.30	14.50	10.90
Total income											
1980	6.00	6.10	5.00	5.40	5.20	6.00	5.70	6.10	6.00	6.40	5.90
1981	5.90	5.90	5.30	5.70	6.30	5.70	5.40	6.60	7.20	5.80	5.90
1982	6.00	5.90	5.30	5.60	6.00	5.70	5.60	6.30	6.50	6.20	6.70
1983	6.20	6.10	5.60	5.90	6.50	5.70	6.20	6.20	6.30	6.70	6.20
1984	6.30	5.80	4.90	6.10	6.20	6.30	6.00	5.80	7.00	6.80	6.50
1985	6.10	6.20	4.80	6.00	5.70	5.70	5.80	5.80	7.40	5.80	6.60
1986	6.10	5.60	4.80	6.10	5.40	5.90	5.80	6.00	7.50	5.90	6.20
1987	6.10	5.80	5.10	5.80	5.70	6.10	5.60	5.60	6.10	6.10	6.50
1988	6.00	5.50	4.70	5.60	5.40	5.90	5.70	5.80	6.30	6.00	5.70
1989	5.90	5.50	5.20	5.90	5.60	5.70	5.80	5.40	6.20	6.40	5.30
1990	6.10	5.70	5.00	5.50	5.40	5.80	5.80	5.80	6.50	6.10	6.70
1991	6.20	5.80	5.20	5.50	5.60	6.20	6.10	5.80	6.00	6.50	5.70
1992	6.30	6.20	4.70	6.10	5.70	5.70	6.30	5.80	6.60	6.80	6.10
1993	6.20	5.90	4.50	6.40	5.40	5.70	6.20	5.90	5.90	6.70	6.60
1994	6.10	6.20	4.30	6.10	5.90	6.00	6.10	5.30	5.90	5.90	6.00
1995	6.20	6.80	4.60	5.90	6.00	6.00	6.20	5.30	6.30	5.90	6.30
1996	6.40	5.90	5.00	6.20	6.10	6.30	6.40	6.10	6.20	6.40	5.90
1997	6.60	6.10	5.30	6.20	6.20	6.40	6.50	5.90	5.80	6.40	5.90
1998	6.80	6.30	5.30	6.70	6.20	6.50	6.80	6.10	5.80	7.50	6.20
After-tax income											
1980	5.10	5.10	4.30	4.60	4.50	4.80	4.90	5.10	5.30	5.40	5.20
1981	5.00	5.00	4.60	4.80	5.30	4.80	4.60	5.50	6.10	4.90	5.00
1982	5.00	5.00	4.50	4.60	5.00	4.60	4.70	5.30	5.40	5.30	5.60
1983	5.10	5.00	4.70	5.00	5.30	4.60	5.10	5.20	5.40	5.70	5.20
1984	5.20	4.90	4.30	5.10	5.10	5.00	5.00	4.80	5.90	5.80	5.30
1985	5.00	5.10	4.20	5.10	4.80	4.70	4.80	4.90	6.10	5.00	5.50
1986	5.00	4.60	4.00	5.00	4.50	4.80	4.80	4.90	6.00	5.00	5.20
1987	4.90	4.80	4.20	4.60	4.70	4.80	4.60	4.60	5.00	5.20	5.20
1988	4.80	4.60	4.00	4.50	4.40	4.60	4.60	4.50	5.00	4.80	4.70
1989	4.90	4.50	4.30	4.70	4.50	4.40	4.70	4.50	4.90	5.10	5.10
1990	4.80	4.60	4.20	4.40	4.40	4.50	4.60	4.50	5.20	4.80	5.40
1991	4.90	4.70	4.20	4.40	4.50	4.70	4.90	4.50	4.70	5.00	4.60
1992	4.90	5.00	3.90	4.80	4.60	4.40	5.00	4.50	5.30	5.40	4.80
1993	4.90	4.80	3.80	5.00	4.40	4.40	4.90	4.60	4.60	5.30	5.20
1994	4.80	4.90	3.60	4.80	4.70	4.50	4.70	4.20	4.60	4.80	4.80
1995	4.80	5.30	3.80	4.70	4.80	4.50	4.80	4.20	4.80	4.80	5.00
1996	5.10	4.80	4.20	5.00	4.90	4.80	5.00	4.80	4.90	5.00	5.30
1997	5.30	4.80	4.30	5.00	5.00	5.30	5.20	4.70	4.70	5.30	5.00
1998	5.40	4.90	4.20	5.40	4.90	4.90	5.50	4.70	4.60	6.10	5.10

Sources: Survey of Consumer Finances; Survey of Labour and Income Dynamics

* Because the data are based on sample surveys, occasionally, as in 1995, an outlier may affect results.

Chart B: In each province, market income shows the greatest inequality.



Source: Survey of Labour and Income Dynamics, 1998

than for total income or after-tax income—and it increased over time (from 7.20 in 1980 to 11.30 in 1998). The largest gap was almost 21 in 1995. This was attributable to an exceptionally high ratio for market income in Newfoundland (30.40)² in contrast to a low of 9.50 in Alberta.

Despite relative stability at the beginning of the study period, up to the mid-1990s, differences grew between the province with the lowest ratio for total and after-tax income and that with the highest. The differences sharpened between 1997 and 1998. Over the full 1980-to-1998 period, the gap in total income grew from 1.40 to 2.20, while that for after-tax income edged up from 1.10 to 1.90.

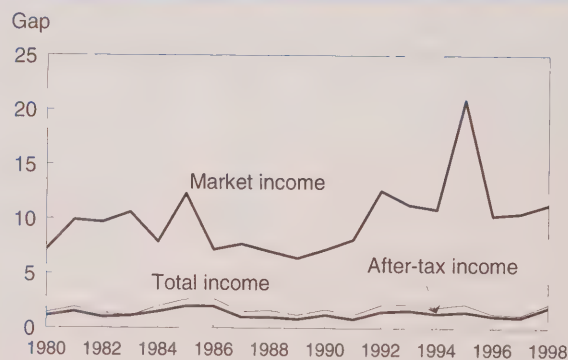
dollar of the 20% with the lowest incomes. In Alberta, this gap was \$6.10. The difference between these two provinces was smaller for after-tax income (\$1.90) than for market income (\$2.70), matching the intraprovincial trends. This comparison can be made for any pair of provinces.

Provincial differences in market income have widened

The study also looked at provincial differences in income inequality each year from 1980 to 1998, by studying the gap between the province having the greatest inequality and the one having the least.

Once again, market income demonstrated the largest difference in inequality ratios each year (Chart C).¹ Over the entire period studied, the difference was about seven times larger, on average, for this measure

Chart C: Market income displays the greatest gap* in interprovincial inequality ratios.



Sources: Survey of Consumer Finances; Survey of Labour and Income Dynamics

* Because the data are based on sample surveys, occasionally, as in 1995, an outlier may affect results.

How has inequality changed within provinces?

An examination of the change in gaps within each province from 1980 to 1998 confirms the observations about differences between the provinces. That is, inequalities in market income tended to increase (Table). The two other income measures reveal a similar tendency—though on a smaller scale—for the majority of provinces.

As for market income ratios, Alberta, Newfoundland, Nova Scotia and Prince Edward Island saw very marked increases from 1996 to 1998. Their ratios grew by 4.10, 3.00, 2.40 and 2.20, respectively. Over the same period, moderate increases took place in New Brunswick (0.90), British Columbia (0.70), Ontario (0.60) and Manitoba (0.60). Quebec and Saskatchewan registered drops in their inequality ratios.

Between 1996 and 1998, only Saskatchewan saw a slight decline (0.40) in its ratio for total income, while Manitoba's remained stable. This ratio edged up by 1.10 in Alberta and by less than 0.60 in the rest of the provinces. In the case of after-tax income, the ratio in Saskatchewan dipped by 0.30, and those of British Columbia and Manitoba, by 0.20 and 0.10. Alberta

registered an increase of 1.10, while Ontario, Nova Scotia, Quebec and Newfoundland saw rises of less than 0.60. Ratios in New Brunswick and Prince Edward Island remained stable.

Summary

Inequalities in income distribution within provinces follow a pattern consistent with the findings of a number of studies. In particular, market income exhibits greater inequality than the other two measures, total income and after-tax income. The same observation applies at the national level.

Throughout the period studied, Prince Edward Island exhibited the lowest inequality ratio for both total income and after-tax income. Newfoundland had, for most of the period, the highest inequality ratio with respect to market income.

The results of this analysis apply to economic families, without regard for family composition. One possible avenue of future research would be to study the differences in inequality ratios relative to family composition. As well, these ratios could be based on income deciles rather than quintiles (see *Ratios based on total income quintiles and deciles*), which would provide

Ratios based on total income quintiles and deciles

The ratio of the average income of the top decile to that of the bottom decile measures how much the 10% of families with the highest incomes have, on average, for every dollar of the 10% of families with the lowest incomes. Ratios based on deciles are higher than those based on quintiles.

	Quintiles	Rank	Deciles	Rank
British Columbia	7.1	1	14.0	1
Canada	6.2		10.4	
Ontario	6.0	2-3	10.1	3
Manitoba	6.0		9.7	4
Alberta	5.9	4-5-6-7	10.6	2
Quebec	5.9		9.6	5
Saskatchewan	5.9		9.5	6
Nova Scotia	5.9		8.8	8
New Brunswick	5.7	8	9.3	7
Newfoundland	5.5	9	8.4	9
Prince Edward Island	4.4	10	6.3	10

Source: Survey of Consumer Finances, 1997

Ratios of averages and medians based on total income deciles

The ratios are based on the amount that families in the appropriate quintiles or deciles have, on average. Median income could be used instead. Ratios based on averages are higher than those based on medians.

	Average	Rank	Median	Rank
British Columbia	14.0	1	9.0	2
Alberta	10.6	2	9.1	1
Canada	10.4		8.7	
Ontario	10.1	3	8.4	3
Manitoba	9.7	4	8.1	5
Quebec	9.6	5	8.3	4
Saskatchewan	9.5	6	7.6	8
New Brunswick	9.3	7	7.9	6
Nova Scotia	8.8	8	7.7	7
Newfoundland	8.4	9	7.5	9
Prince Edward Island	6.3	10	5.6	10

Source: Survey of Consumer Finances, 1997

some idea of the difference between incomes of the 10% of families with the highest incomes and those of the 10% of families with the lowest. Another option would be to use median income instead of average income, based on either quintiles or deciles (see *Ratios of averages and medians based on total income deciles*).

Perspectives

■ Notes

- 1 The pattern for all provinces combined was similar.
- 2 Because the data are based on sample surveys, occasionally, as in 1995, an outlier may affect results.

■ References

Alter, H.E. and T.L. Greenberg. "Taxes, transfers and regional disparities." *Perspectives on Labour and Income* (Statistics Canada, Catalogue no. 75-001-XPE) 2, no. 4 (Winter 1990): 51-61.

Finnie, R. "Differences in earnings inequality by province, 1982-94." *Canadian Economic Observer* (Statistics Canada, Catalogue no. 11-010-XPB) 11, no. 2 (February 1998): 3.1-3.12.

Statistics Canada. *Income in Canada*. Catalogue no. 75-202-XPE. Ottawa, 1998.

Are you moving?

Please forward your name, old address, new address, telephone number and client reference number to: **Statistics Canada, Operations and Integration Division, Circulation Management, 120 Parkdale Avenue, Ottawa, Ontario K1A 0T6**; or call (613) 951-7277 or 1 800 700-1033 toll free, or fax (613) 951-1584.

Please allow four weeks notice to ensure uninterrupted delivery.

What's new?

Recent reports and studies

■ JUST RELEASED

■ *Women in the workforce*

In 1999, 55% of all women aged 15 and over had jobs, up from 42% in 1976. As a result, women accounted for 46% of the workforce, up from 37%. Some 28% of all employed women worked less than 30 hours per week, compared with just 10% of employed men.

The majority of employed women continue to be concentrated in certain occupations. In 1999, 70% of all employed women were in teaching, nursing and related health occupations, clerical or other administrative positions, and sales and service occupations. The proportion employed in traditionally female-dominated occupations, however, has slowly declined since 1987, when 74% were in such jobs.

Women have increased their representation in several professional fields in recent years. In 1999, they made up 49% of business and financial professionals, up from 41% in 1987. Women also made up 47% of all doctors and dentists, up from 44%. As well, they have increased their share of total employment in managerial positions, from 29% to 35%. In contrast, only 20% of professionals employed in the natural sciences, engineering, and mathematics in 1999 were women, little changed since 1987 (17%).

The average earnings of employed women are still substantially lower than those of men. In 1997, women working full year full time had average earnings of just under \$31,000, or 73% of their male counterparts' earnings. However, their average earnings were up from 68% in 1990 and around 64% in the early 1980s.

The fourth edition of *Women in Canada* provides a comprehensive statistical profile of the evolving status of women in Canadian society, with details on their demographic characteristics, family arrangements, health, education, employment and unpaid work activity, income, housing, and criminal victimization. This 300-page report also includes separate sections on immigrants, members of the visible minority community, Aboriginal women and seniors.

Women in Canada 2000 (Catalogue no. 89-503-XPE, \$45) is now available. For more information, contact Colin Lindsay, Housing, Family and Social Statistics Division, at (613) 951-2603; fax: (613) 951-0387; lindcol@statcan.ca.

■ *Market research update*

Since 1975, the *Market Research Handbook* has been an authoritative source of socio-economic information, providing key characteristics of local and national markets. With accurate and timely statistics on the changing demographics, standards of living, and economic characteristics of Canadian society, the handbook helps businesses locate target markets, track their market share, and assess their competitive position.

The 2000 edition contains the latest data from the 1996 Census and a wide range of surveys, and incorporates a number of features designed to make it more user-friendly. Features include a user's guide, annotated charts, help lines for each data source, and references to CANSIM, Statistics Canada's Canadian Socio-economic Information Management System.

The 2000 edition of the *Market Research Handbook* (Catalogue no. 63-224-XPB, \$125) is now available. For general information about this publication, contact Serge Bourret, Small Business and Special Surveys Division, at (613) 951-0821.

■ *Social policy simulation*

The Social Policy Simulation Database and Model (SPSD/M) is a static microsimulation model based on 1996 microdata. It comprises a database, a series of tax/transfer algorithms and models, analytical software and user documentation. Produced as an occasional product since 1985, it has been widely used to study changes to the tax and transfer system.

The SPSPD/M allows estimation of the income redistribution effects or cost implications of changes in the personal taxation and cash transfer system, and the potential effects of changes in taxes, earnings, demographic trends, and a wide range of other factors. It can be used to study federal and provincial tax and transfer changes from 1984 through 2003.

The SPSPD/M allows "what-if" questions to be answered. What if there were a change to the taxes Canadians paid or transfers they received? Who would gain and who would lose? Would single parent households in a particular province be better off? By how much? How much extra money would federal or provincial governments collect or pay out?

The Social Policy Simulation Database and Model: Version 8.0 (Catalogue no. 89F0002XCB, \$5,000/\$12,500) is now available on CD-ROM. For more information, contact Susan Carrothers, Social and Economic Studies Division, at (613) 951-1782; spsdm@statcan.ca.

■ *Registered apprenticeship training, 1998*

Approximately 177,700 people were registered in trades apprenticeships in 1998, some 3% more than in 1997. While all sectors of registered apprenticeship training have grown in recent years, many still remain below 1991 levels.

The number of registered apprentices has been rising since 1995, after a drop in the early 1990s that coincided with the recession. The demand for apprentices declined during this period, perhaps the result of the weak economy and fewer opportunities for on-the-job training.

Overall, registrations in such training in 1998 were 8% lower than in 1991. The decrease was especially evident in building construction and electrical/electronics and related. Only the food and services trades and other trades had higher registration.

While registrations were down, the total workforce linked to most major trade groups has been on the rise, and was higher in all sectors in 1998 than in 1991.

For general inquiries, contact Sharon-Anne Borde, Culture, Tourism and the Centre for Education Statistics, at (613) 951-1503; fax: (613) 951-9040; sharon-anne.borde@statcan.ca. To enquire about concepts, methods or data quality, contact Karl Skof or Bernard Bourgoïn, Culture, Tourism and the Centre for Education Statistics, at (613) 951-1529; skofkar@statcan.ca or (613) 951-1506; bourber@statcan.ca, respectively; fax: (613) 951-6765.

■ *Pilot Survey of Information Technology Occupations, 2000*

Sponsored by Human Resources Development Canada, this employer survey provides information on 21 information technology (IT) occupations for the computer design and related services industry across Canada, as well as the architectural, engineering and related services industry in Quebec and the insurance carriers industry in Ontario. Estimates on the numbers of IT employees and contract workers are available, as is information on job vacancies, hiring, recruitment and retention practices, and training.

For more information, or to enquire about concepts, methods or data quality, contact Cathy Connors, Small Business and Special Surveys Division, at (613) 951-1634; cathy.connors@statcan.ca.

■ *Farm incomes, 1996: Potato farms*

Economic Overview of Farm Incomes offers farm financial information and analysis based on data from the Taxation Data Program and various agricultural surveys. The new bulletin provides a detailed analysis of potato farms, including information on farm-level revenues, expenses,

and net operating income before depreciation, by revenue class and by province. Information on the concentration and specialization of production, as well as on the physical characteristics of potato farms by revenue class, is also included.

The ninth bulletin in the series *Economic Overview of Farm Incomes*, a joint publication of Statistics Canada and Agriculture and Agri-Food Canada, is now available. The August 2000 issue (Catalogue no. 21-005-XIE, free) is now available on Statistics Canada's website (www.statcan.ca). On the "Products and services" page, choose "Free publications," then "Agriculture."

For more information, or to enquire about concepts, methods or data quality, contact Lina Di Pi  tro or the Client Services Unit, Agriculture Division, at (613) 951-3171 or (613) 951-5027, respectively; fax: (613) 951-3868.

■ ***Aquaculture statistics, 1999*** ***(preliminary)***

Fish farmers generated record revenues in 1999 as product sales climbed to an estimated \$548 million, up 7% over 1998. The driving force behind the growth was the higher value of exports, which reached \$386 million, an increase of 5% over 1998 and more than double the annual levels exported in the early 1990s. These went largely to the United States, where demand for Canadian finfish, principally salmon, remained strong. Domestic sales, meanwhile, remained relatively flat.

Fish farmers in British Columbia and New Brunswick continued to be the industry leaders. Together these two provinces accounted for 85% of total sales of aquaculture products; British Columbia generated more than one-half of the sales and New Brunswick almost one-third. The industry in both provinces is based largely on finfish operations, which accounted for an estimated 91% of total national sales in 1999.

Prince Edward Island, the country's largest producer of shellfish, continued to expand production in 1999. Total revenue from the sale of shellfish reached an estimated \$22 million, a jump

of 11% over 1998 (mirroring that of finfish [10%]). This amount represented more than one-half of the total national sales.

The gross value added (the difference between gross output and product expenses) to the Canadian economy by the aquaculture industry in 1999 was an estimated \$241 million, a rise of 11% over the previous year. This was due to growth in output (including inventories). Depreciation and interest also rose marginally, reaching \$26 million and \$15 million, respectively.

The statistics now available are production and value by province and species, exports and value added. Data will be available soon in the updates to the *Livestock Statistics—Update* binder (Catalogue no. 23-603-UPE, \$45/\$149) or the *Agriculture Economic Statistics* binder (Catalogue no. 21-603-UPE, \$26/\$52). Revised 1999 estimates of value added, production and exports for the aquaculture industry will be released in March 2001.

For more information, or to enquire about concepts, methods or data quality, contact Bernadette Alain, Truro Agricultural Statistics Office, at (902) 893-7251; bernadette.alain@statcan.ca or Tony Dupuis, Agriculture Division, at 1 800 465-1991; (613) 951-2511; tony.dupuis@statcan.ca.

■ **WHAT'S NEW IN SAADD?**

■ ***Federal electoral districts***

Canadians can obtain a wealth of information about their federal electoral district, free of charge, on Statistics Canada's website (www.statcan.ca). The Agency is making available statistical profiles of all 301 federal electoral districts. The profile includes data from the 1996 Census and a mapping feature.

Four major components are featured: population and demographic characteristics; education; income and work; and families and dwellings. For example, education levels of people aged 15 and over are available, as are their occupations, mother tongue and the composition of their families. Readers can also compare data for their federal electoral district with provincial and national data.

For more information, contact your nearest Statistics Canada Regional Reference Centre.

Information for 1998, showing age and sex of the population, income ranges and income sources by federal electoral district, is now available on a cost-recovery basis. For families, information is also available on family composition, age and sex of family members, sources of income and reliance on government transfers.

For more information, or to enquire about concepts, methods or data quality, contact Client Services, Small Area and Administrative Data Division, at (613) 951-9720; fax: (613) 951-4745; saadinfo@statcan.ca.

■ 1998 income

The median income of census, or nuclear, families increased 2% from 1997 to 1998, to \$47,300, after adjusting for inflation. Oshawa (\$60,000) had the highest family income of all census metropolitan areas (CMA), followed by Windsor (\$59,800).

Median income was much higher for husband-wife families (\$52,500) than for lone-parent families (\$22,700). The CMA with the highest median family income for husband-wife families was Windsor (\$66,500); for lone-parent families it was Calgary (\$28,500).

The median total income of individuals in Canada was \$20,100 in 1998, an increase of 2.7% over 1997, after adjusting for inflation. People in all census metropolitan areas (CMA) reported modest increases in median total income; those in Calgary had the largest rise at 4.3%, followed by Chicoutimi-Jonquière (3.7%) and Saint John and Sherbrooke (3.6%).

The highest median total incomes were still in Oshawa (\$25,900) and Ottawa-Hull (\$25,200). The lowest were in Trois-Rivières (\$17,100) and Chicoutimi-Jonquière (\$18,200), although both recorded greater-than-average year-over-year increases compared with all CMAs. However, the relative ranking of CMAs according to median total income changed little from 1997 to 1998.

This information came from income tax returns filed in the spring of 1999. The data for *Family Income* (Catalogue no. 13C0016), *Seniors Income*

(Catalogue no. 89C0022), *Neighbourhood Income and Demographics* (Catalogue no. 13C0015), the *Labour Force Income Profile* (Catalogue no. 71C0018) and the *Economic Dependency Profile* (Catalogue no. 13C0017) are available for letter carrier routes, urban forward sortation areas (the first three characters of the postal code), cities, towns, census divisions, CMAs, each province and territory, and Canada. For more information, or to enquire about concepts, methods or data quality, contact Client Services, Small Area and Administrative Data Division, at (613) 951-9720; fax: (613) 951-4745; saadinfo@statcan.ca.

■ Postal area data, 1998

Postal Area Profiles covers more than 5,000 communities across Canada. Based on 1998 tax records, this databank presents a comprehensive picture of these communities.

The profiles consist of five tables, which provide information on taxfilers and dependants, selected sources of income of individuals, labour force participation, economic dependency on transfer payments, and family characteristics. Each community can be compared with provincial and national figures to show how it fits into the broader picture. The data span four years to show recent trends. High standards of confidentiality ensure that no individual or family can be identified.

To order Postal Area Profiles, or to enquire about concepts, methods or data quality, contact Client Services, Small Area and Administrative Data Division, at (613) 951-9720; fax: (613) 951-4745; saadinfo@statcan.ca.

■ Registered retirement savings plan contributions, 1999

Contributions to registered retirement savings plans (RRSP) rebounded to their second highest level in 1999. A record 6,207,000 taxfilers contributed to an RRSP during the 1999 tax year, up 1.4% from the previous year. They contributed \$27.8 billion, a 2.6% increase from 1998 (after adjusting for inflation as measured by the Consumer Price Index).

Both the number of contributors and the amount of their contributions recovered, after declining in 1998 for the first time since 1991. Contributions in 1999 were still short of the record \$28.2 billion set in 1997. About 29% of all taxfilers contributed, or 36% of those eligible.

Although only 37% of eligible taxfilers were from Ontario, they contributed \$11.9 billion, or 43% of the total. Contributors from Quebec deposited \$5.9 billion, or 21% of the total. The number of contributors increased in all provinces except Saskatchewan, where 197,200 people made contributions, down 2.5%. There, the number of contributors peaked in 1996, decreasing ever since.

The average contribution in 1999 was \$4,477, compared with \$4,576 in 1997 and \$4,424 in 1998, after inflation is taken into account. In general, taxfilers with the highest incomes contributed the most. In 1999, the average contribution of those whose total income exceeded \$80,000 was \$12,535, while for those with total income between \$60,000 and \$79,999, the average contribution was \$6,199.

Databanks for *RRSP Contributors* (Catalogue no. 17C0006, variable price) and *Canadian Taxfilers* (Catalogue no. 17C0010, variable price) are available for Canada, the provinces and territories, cities, towns, census metropolitan areas, census divisions, and areas as small as forward sortation areas (the first three characters of the postal code) or letter carrier routes. For more information, or to enquire about concepts, methods or data quality, contact Client Services, Small Area and Administrative Data Division, at (613) 951-9720; fax: (613) 951-4745; saadinfo@statcan.ca.

■ WHAT'S NEW IN LABOUR STATISTICS?

■ *Latest on the labour force*

An overview of average wages and wage distributions in the late 1990s

By the hour or by the week, average wages in 1999 increased at about double the 1998 pace, according to the Labour Force Survey (LFS).

During 1999, the 12 million employees in Canada earned an average \$16.14 an hour, or \$595.62 a week. The average hourly wage increased by 39 cents or 2.5% from 1998, just over double the 1.2% increase from 1997. The average weekly wage rose \$15.73, or 2.7%, compared with 1.4% in 1998. The increase in average weekly wages was due in part to slightly longer work hours.

Both increases exceeded the average 1.7% rise in the Consumer Price Index (CPI). This means that average real hourly wages (adjusted for growth in the CPI) rose 0.8%, while average real weekly wages increased 1.0%.

Hourly wages rose more for men than women. However, because the number of work hours increased for women and declined for men, average weekly wages increased proportionally more for women.

Employees in Ontario made an average \$633.05 a week in 1999, highest among the provinces. At \$625.22, British Columbia was the only other province to exceed the national average. Average weekly wages were relatively low in the four Atlantic provinces. Hourly wages rose 4.0% in Alberta, the strongest growth rate among the provinces. Weekly wages increased most in Alberta and Ontario (3.6%).

New hirings and permanent separations, 1999

Atlantic Canadians flowed into and out of jobs or businesses at a higher rate than people in other regions of the country in 1999. Ontario and British Columbia recorded the lowest rates among the provinces. In addition, the degree to which people moved into and out of jobs or businesses varied with age and education, and from industry to industry.

Young people set the tone for a dynamic labour market. The pace at which youths (15 to 24) moved into or out of jobs or businesses was much greater than that for adults 25 to 54 or older workers (55 and over). In 1999, about 2.6 million hirings of young people occurred, resulting in a hiring rate of 55%. This rate was almost twice the national average (28%).

People with university degrees were less likely to be laid off than those with a high school education or less.

On an industry basis, job stability was relatively low in the accommodation and food industry, in retail trade, and in construction.

Even the time of year had an effect, mainly because of turnover among young people. As a rule, the most dynamic month is September, when students leave their summer jobs and when some seasonal jobs come to an end. Hirings outnumber separations, however, at the beginning of summer.

Just over 5.4 million hirings occurred in 1999, accounting for 28% of jobs held and businesses owned that year (excluding second jobs or businesses). In addition, an estimated 5.1 million permanent separations (quits or layoffs) took place. They represented 26% of jobs held or businesses owned throughout the year. Of these separations, 55% were quits.

The above articles appear in *Labour Force Update* (Catalogue no. 71-005-XPB, \$29/\$96, Volume 4, nos. 2 and 3), now available. For more information, or to enquire about concepts, methods or data quality, contact Geoff Bowlby, Labour Statistics Division, at (613) 951-3325; fax: (613) 951-2869; bowlgeo@statcan.ca.

■ **Employment Insurance data**

Statistics Canada and Human Resources Development Canada have uncovered an error in the calculation of Employment Insurance beneficiaries. This error affected the data from January 1997 to April 2000. A historical revision is under way to revise the data back to January 1997.

For the next few months, these data will be released only at the provincial level and unadjusted for seasonal trends. The series on claims received and allowed, benefit payments and weeks paid, which are correct, will continue to appear in both *The Daily* and on CANSIM as regularly scheduled.

For more information, contact Justin Lacroix, Labour Statistics Division, at (613) 951-0775; fax: (613) 951-4087; labour@statcan.ca.

■ **WHAT'S NEW IN INCOME STATISTICS?**

■ ***Spending patterns, 1998***

Spending Patterns in Canada presents statistical highlights and key tables from the annual Survey of Household Spending (which replaces the Family Expenditure Survey and the Household Facilities and Equipment Survey). Information includes, for example, how Canadian households spend their money, and what appliances, communications or home entertainment equipment they have. Also available are certain characteristics of Canadian homes—number of rooms, heating methods, and state of repair, for example.

The survey collects information about expenditures by households and families in Canada on a wide variety of goods and services—from food and shelter to pet expenses and movie admissions. It also collects data about dwelling characteristics, household appliances, home entertainment and communications equipment, and vehicles.

Spending Patterns in Canada, 1998 (Catalogue no. 62-202-XIE, \$34 or Catalogue no. 62-202-XPE, \$45) is now available. For more information about the current survey results and related products and services, contact Client Services, Income Statistics Division, at 1 888 297-7355 or (613) 951-7355; fax: (613) 951-3012; income@statcan.ca.

■ ***Pension plans, January 1, 1999***

Employer-sponsored registered pension plans (RPP) remain an integral part of saving for retirement, although their coverage has been declining throughout the 1990s. At the end of 1998, some 41% of paid workers were covered by RPPs, down from 45% in 1992.

The number of members has also been falling, from a peak of 5.3 million early in the decade. Just under 5.1 million workers belonged to some 14,900 RPPs at the end of 1998. The drop in membership appears to have slowed in recent years, with membership edging up 0.1% from 1997. At the end of 1998, about 2,272,000 female workers belonged to an RPP, up from about 2,250,000 at the end of 1996. At the same time, the number of male workers covered by an RPP declined from 2,866,000 to about 2,819,000.

Registered retirement savings plans (RRSP) continued to outstrip RPPs in terms of both participation and amounts. In 1998, Canadians contributed \$62.0 billion to the three main retirement income programs: RPPs, RRSPs and the Canada and Quebec Pension Plans (C/QPP). RPPs accounted for 27% of that amount, compared with 43% for RRSPs and 30% for the C/QPP.

Just over 6.1 million taxpayers contributed to an RRSP in 1998, compared with the 5.1 million members covered by an RPP. The contributors to the C/QPP (13.6 million) far exceeded those of both RPPs and RRSPs because that program is mandatory for all workers.

About 53% of paid workers in Newfoundland belonged to RPPs in 1998, the highest proportion in the country—reflecting that province's high unionization rate. Coverage also exceeded the national average in four other provinces: Manitoba, Saskatchewan, Quebec and Nova Scotia. Manitoba is the only province in which membership in an RPP, if offered, is compulsory. Alberta had the lowest coverage rate, 31%, owing in part to its low rate of unionization.

The number of RPP members in the public sector decreased 7% between 1992 and 1998. This was a result of recent cutbacks in the number of federal and provincial government employees. In contrast, the number of RPP members in the private sector grew a slight 1% between 1992 and 1998. This was the result of a growing number of women employed in the private sector who belonged to RPPs. Public sector employers offered roughly 1,200 RPPs in 1998. Although these made up only about 8% of all such plans,

they accounted for 46% of total plan membership. Just over 56% of all RPP members in the public sector were women.

Pension Plans in Canada: Statistical Highlights and Key Tables, January 1, 1999 (Catalogue no. 74-401-SIB, \$30 or Catalogue no. 74-401-SPB, \$40) is now available. A table with data on the labour force and paid workers covered by an RPP is also available, free of charge, on Statistics Canada's website (www.statcan.ca). On the "Canadian statistics" page, choose "The people," then "Labour, employment and unemployment," then "Employment Insurance and pensions." To obtain custom tabulations, for more information, or to enquire about concepts, methods or data quality, contact Client Services, Income Statistics Division, at (613) 951-7355 or 1 888 297-7355; fax: (613) 951-3012; income@statcan.ca.

■ Research paper series

Pension Coverage and Retirement Savings of Young and Prime-aged Workers in Canada: 1986-1997

R. Morissette and M. Drolet

Income research paper series

(Catalogue no. 75F0002MIE00009)

This paper assembles data from several household surveys to document how pension coverage of young and prime-aged workers evolved in Canada between the mid-1980s and the mid-1990s. Between 1986 and 1997, pension coverage fell significantly for men, dropped slightly for young women and increased for prime-aged women. The decline in union density and employment shifts toward low-coverage industries explain most of the drop in pension coverage of men and young women. In contrast, most of the increase in coverage of prime-aged women remains unexplained.

While pension coverage fell for men and young women, their real average contributions to registered retirement savings plans (RRSP) grew substantially. As a result, the sum of the amounts they contributed to registered pension plans (RPP) and RRSPs increased markedly. This means that although total compensation for these people may have decreased (through the drop in their RPP coverage), workers' preparation for retirement seems to have improved in the late 1990s.

User Guide to 1996 Census Income Data

J. Gartley and A. Rashid

Income research paper series

(Catalogue no. 75F0002MIE00010)

This guide explains the concept of income and provides definitions of the various sources of income and derived income variables. The report also documents features of the census that can affect census income estimates. For example, it includes the income questions asked in the 1996 Census and the instructions to respondents. The report briefly explains the methodology adopted to capture the response information, to process and edit it for inconsistencies, and to impute for non-response. The effect of these operations on income data is described.

The report includes summary results of a comparison of census income estimates with those of other sources such as the National Accounts and the Survey of Consumer Finances. Also included is a detailed review of income-related content and coverage in the census since 1971.

Should the Low Income Cutoffs be Updated? A Summary of Feedback on Statistics Canada's Discussion Paper

C. Cotton and M. Webber

Income research paper series

(Catalogue no. 75F0002MIE00011)

This report summarizes responses to a discussion paper on low income cutoffs released in January 2000. Low income cutoffs (LICO) are thresholds used to calculate low income rates. They start with what families spend, on average, on food, shelter and clothing as a proportion of income. A margin of 20 percentage points is added to this figure. Current low income rates represent the point at which a family would generally spend more than 55% of its before-tax income or 64% of its after-tax income on these three essentials. The current LICOs reflect family spending patterns observed in the 1992 Family Expenditure Survey (FAMEX).

The discussion paper proposes three options for updating the cutoffs and for dealing with the availability of annual expenditure data from the Survey of Household Spending (SHS), which

has replaced FAMEX. Option 1 maintains the status quo. Statistics Canada would continue to produce low income information based on 1992 and 1986 spending patterns, updating the LICOs annually using the Consumer Price Index (CPI). This option defers a decision on rebasing to some unspecified date.

Option 2 rebases the LICOs to reflect spending patterns in 1997, the first year the SHS was conducted. The cutoffs would be backcast, perhaps to 1990. For historical continuity, Statistics Canada would also produce low income rates using the 1992 base, but would drop the 1986 base. This approach is consistent with past rebasing exercises.

Option 3 takes advantage of the annual expenditure data now available. Cutoffs would be calculated annually, using current spending data. These cutoffs would be used for production of low income rates for that year only—they would not be backcast or extended into the future. The 1992 base series would also be maintained, for continuity.

The discussion paper recommended Option 3 because it affords an opportunity to use the latest available data without loss of continuity. By the time the 1999 income results are published in the spring of 2001, three years of annual spending data from the SHS will be available. Most reviewers supported this option.

The above research papers are available free on Statistics Canada's website (www.statcan.ca). On the "Products and Services" page, choose "Research papers (free)," then "Personal finance and Household finance," then "Income research paper series." For more information, or to enquire about concepts, methods or data quality, contact Client Services, Income Statistics Division, at (613) 951-7355 or 1 888 297-7355; fax: (613) 951-3012; income@statcan.ca.

Perspectives

Key labour and income facts

Selected charts and analysis

This section presents charts and analysis featuring one or more of the following sources. For general inquiries, contact Joanne Bourdeau at (613) 951-4722; bourjoa@statcan.ca.

Administrative data

Small area and administrative data

Frequency: Annual
Contact: Customer Services
(613) 951-9720

Business surveys

Annual Survey of Manufactures

Frequency: Annual
Contact: Dissemination agent
(613) 951-9497

Business Conditions Survey of Manufacturing Industries

Frequency: Quarterly
Contact: Claude Robillard
(613) 951-3507

Census

Census labour force characteristics

Frequency: Quinquennial
Contact: Michel Côté
(613) 951-6896

Census income statistics

Frequency: Quinquennial
Contact: John Gartley
(613) 951-6906

Employment and income surveys

Labour Force Survey

Frequency: Monthly
Contact: Marc Lévesque
(613) 951-2793

Survey of Employment, Payrolls and Hours

Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

Help-wanted Index

Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

Employment Insurance Statistics Program

Frequency: Monthly
Contact: Sylvie Picard
(613) 951-4090

Major wage settlements

Bureau of Labour Information
(Human Resources Development Canada)
Frequency: Quarterly
Contact: (819) 997-3117
1 800 567-6866

Labour income

Frequency: Quarterly
Contact: Anna MacDonald
(613) 951-3784

Survey of Labour and Income Dynamics

Frequency: Annual
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

Survey of Consumer Finances

Frequency: Annual
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

Survey of Household Spending (replaces Household Facilities and Equipment Survey and Family Expenditure Survey)

Frequency: Annual
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

General Social Survey

Education, work and retirement

Frequency: Occasional
Contact: Client Services
(613) 951-5979

Social and community support

Frequency: Occasional
Contact: Client Services
(613) 951-5979

Time use

Frequency: Occasional
Contact: Client Services
(613) 951-5979

Pension surveys

Pension Plans in Canada Survey

Frequency: Annual
Contact: Patricia Schembari
(613) 951-9502

Quarterly Survey of Trusteed Pension Funds

Frequency: Quarterly
Contact: Bob Anderson
(613) 951-4034

Special surveys

Survey of Work Arrangements

Frequency: Occasional
Contact: Ernest B. Akyeampong
(613) 951-4624

Adult Education and Training Survey

Frequency: Occasional
Contact: Client Services
(613) 951-7355 or
1 888 297-7355

Graduate Surveys

(Postsecondary)
Frequency: Occasional
Contact: Bill Magnus
(613) 951-4577

The labour market in the 1990s

The economy of the 1990s was characterized by buzzwords and phrases such as “downsizing,” “high performance workplaces,” “increasing globalization,” “technological revolution,” “the end of work,” and “the knowledge-based economy.” Behind most of these phrases is the notion that competitive and technological pressures have radically altered the production processes, hiring, and business strategies of firms, thus affecting the labour market in a major and often negative manner.

However, in addition to change resulting from the influence of technology and competition on labour demand, factors that potentially affected outcomes in the 1990s include a weak economic recovery, supply-side shifts, changing labour market institutions, and a change in the way firms organized their workforces.

In some ways the 1990s labour market was similar to the 1980s, while in others it was different. Understanding what causal factors underlie these changes is an ongoing process, and there appear to be a number of major puzzles regarding recent labour market outcomes.

Definitions

Gross Domestic Product (GDP) is the total dollar value of all goods and services produced within Canada during a given year. It is also a measure of the income generated by production within Canada.

The **hiring rate** is the fraction of all workers in a firm who were hired in a given year.

Between any two years, **job creation** is the increase in employment observed in companies that are expanding, and **job destruction** (or loss) is the decrease in employment in all contracting companies.

Average job tenure is the average complete length of time a worker just starting a new job can expect to remain with that employer.

Labour force participation rate is the total labour force (the employed and the unemployed) expressed as a percentage of the population aged 15 and over.

Permanent layoff occurs when a worker is laid off from a company and does not return within 12 months.

Permanent separation is a separation in which the person does not return to the same employer by the end of the calendar year following the separation. It includes both layoffs and quits.

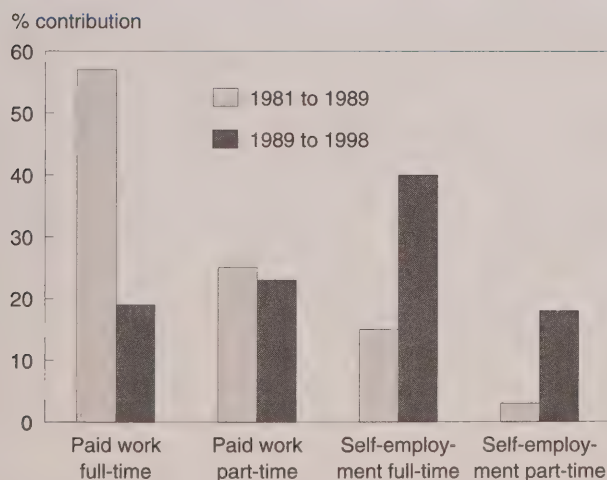
Average annual growth in GDP and employment



Sources: Labour Force Survey; CANSIM

Perhaps the single most important factor influencing labour market outcomes in the 1990s was weak aggregate demand. Gross domestic product (GDP) grew at an annual average rate of almost 3% over the 1980s (1980 to 1989), but only 1.8% over the 1990s (1989 to 1998). This weak GDP growth contributed to low employment growth, which fell from an average of 2% per year in the 1980s to only 1% in the 1990s. This, in turn, may have affected other outcomes, such as the shift to self-employment and depressed labour market flows.

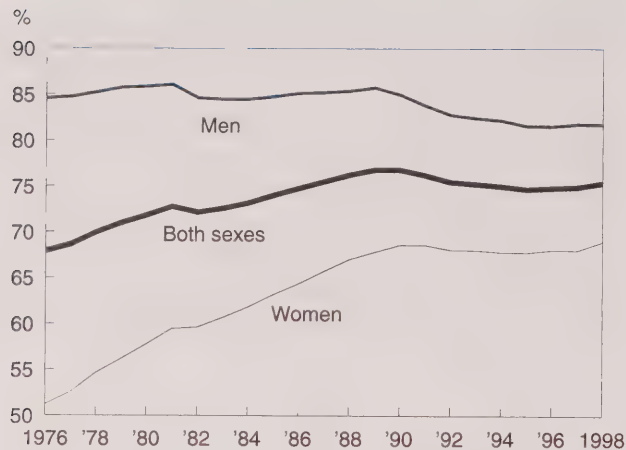
Sources of employment growth



Source: Labour Force Survey

Job gains during the last decade were concentrated in own-account self-employment rather than in traditional full-time paid employment. Over the 1990s, full-time paid jobs accounted for only 18% of net job creation, versus 58% in the 1980s, and 75% in the United States during the 1990s. Self-employment accounted for about 58% of the net change in total employment during the 1990s, compared with only 22% during the 1980s and 6% in the United States.

Labour force participation rate*

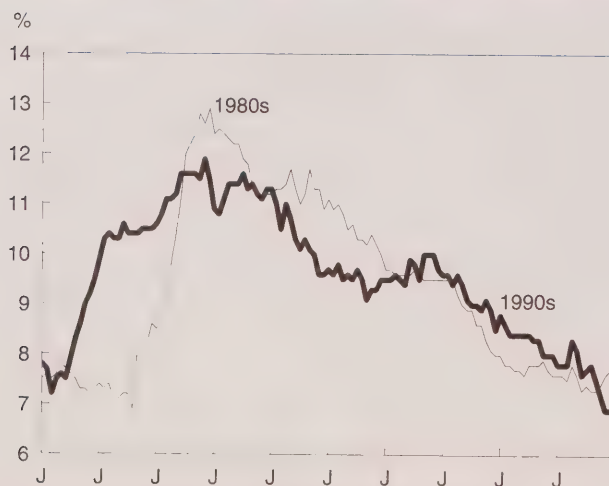


Source: Labour Force Survey

* Among 15-to-64 year-olds.

The labour force participation rate declined in the early 1990s and remained depressed through 1998. Most of this drop was due to declines among young workers and older men. Forty-one percent of the shortfall in the 1990s (the difference between the observed values and what one would expect based on the last cyclical peak in 1989) was among young men, 30% among young women, and 31% among men 55 to 64. For youths, most of this was due to their increased tendency to stay in school, which was probably related to deteriorating job opportunities, and the belief that higher levels of education were required to compete in the labour market. Little overall change among prime-aged workers masked a deterioration among men and an improvement among women. For 25-to-54 year-olds, participation was 36% lower than expected among men in 1998 (based on the patterns of 1989), and 37% higher among women.

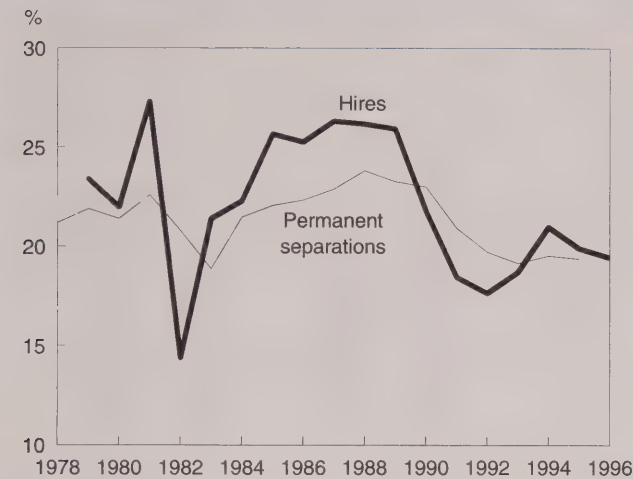
Unemployment rate, 1980s and 1990s



Source: Labour Force Survey

Although unemployment did not rise between the 1980s and the 1990s, by historical standards it was high during both cycles. The unemployment rate fell at about the same rate during the 1990s recovery as it had during the 1980s, although it remained high longer during the later recession. Unemployment duration was marginally longer and incidence marginally lower in the 1990s, although these differences were small. However, while unemployment in the 1990s resembled that of the 1980s, for a worker with a given level of education and experience, the unemployment rate rose and the likelihood of holding a job declined. Only by increasing their human capital could workers maintain their relative position in the labour market.

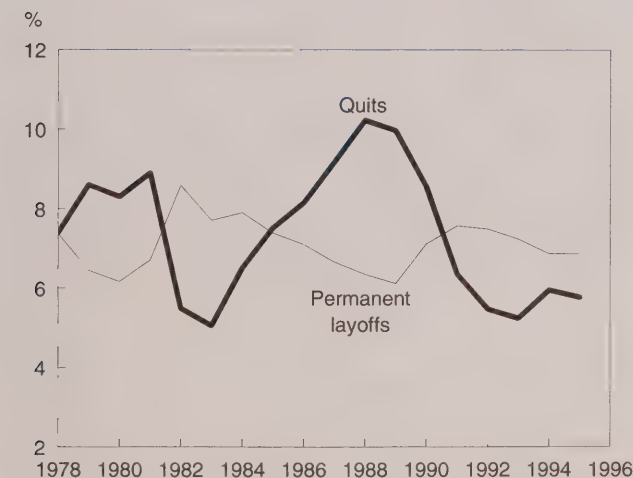
Hiring and permanent separation rates



Source: Longitudinal Worker File

The story regarding labour flows is one of less mobility, at least to the mid-1990s. Employers reduced hiring rather than increase layoffs. Post-recession new hires were 20% of employment during the mid-1990s, compared with 24% during the mid-1980s. New labour force entrants were probably those most affected.

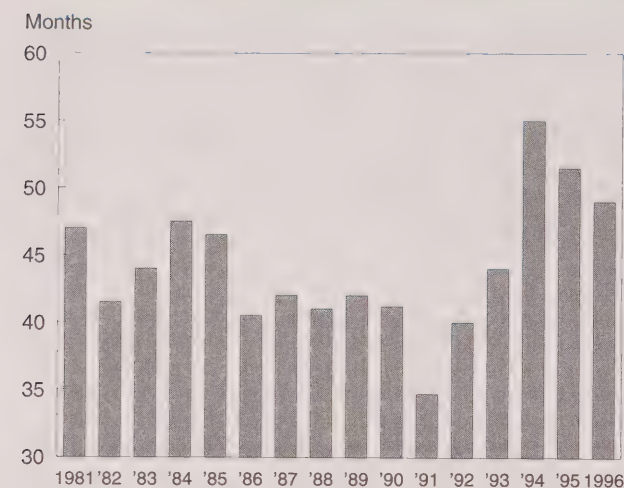
Permanent layoff and quit rates



Source: Longitudinal Worker File

While hiring rates were low, the likelihood of being permanently laid off did not increase during the 1990s. This holds even after controlling for changes in the composition of the workforce. In the face of poor job opportunities, quit rates fell from 7.4% during 1983 to 1985 to 5.6% during 1993 to 1995. With lower quit rates and no substantial rise in permanent layoffs, the likelihood of a worker's permanently separating from a firm actually fell—from 22.0% during 1983 to 1985 to 19.3% during 1993 to 1995. Lower rates of hiring and permanent separations served to diminish labour mobility.

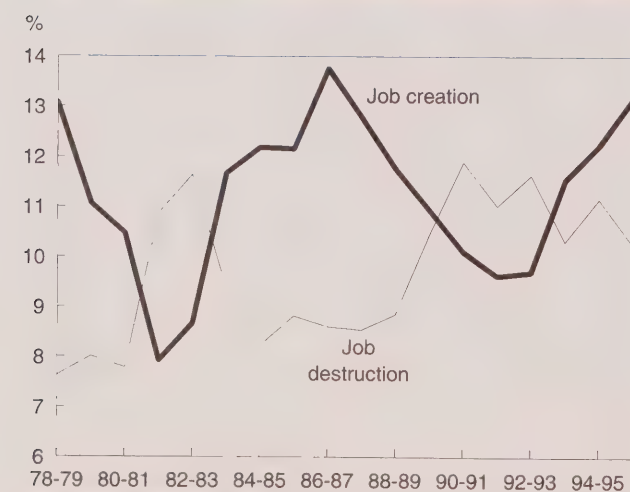
Average complete length of a new job



Source: Labour Force Survey

Along with lower labour turnover comes longer job tenure. Despite concerns regarding job stability, average job tenure in paid jobs increased. The completed length of a new job rose from an average 45 months during 1983 to 1986 to 50 months during 1993 to 1996. This is not necessarily a positive sign, as it reflects in part lower quit and hiring rates in a weak job market. However, it challenges the notion that job stability has fallen.

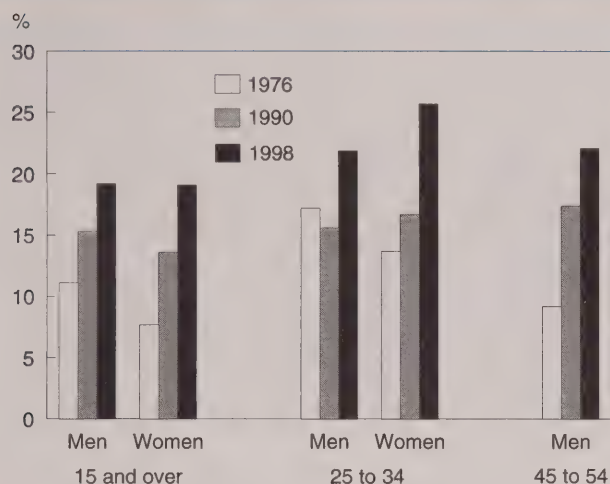
Job creation and destruction rates



Source: Longitudinal Employment Analysis Program

“Downsizing” reflects the notion that firms reduced their workforce and labour costs in order to increase competitiveness structurally, not in response to a cyclical decrease in demand. Paid employment growth was indeed quite weak during most of the 1990s. Job destruction increased in the 1990s relative to the 1980s, which on the surface is consistent with more downsizing. Between 1984 to 1986 and 1994 to 1996, two roughly comparable periods in the economic recovery, the job destruction rate rose 1.8 percentage points. While an increase during the recession was to be expected, the rate remained high during the recovery of the 1990s. Most of the increase was within industries rather than the result of a compositional shift in employment toward industries with high job destruction rates.

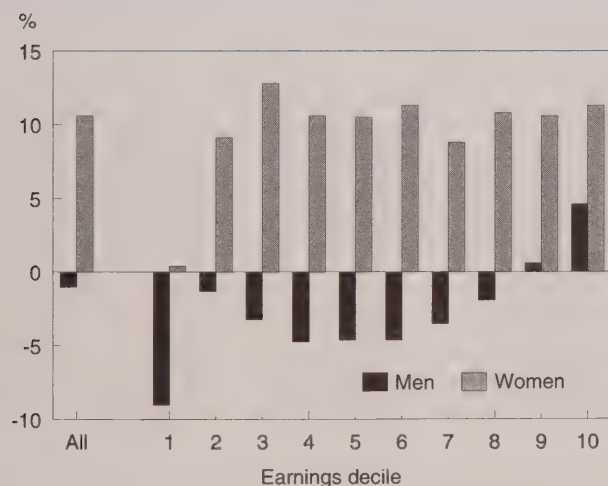
Proportion of labour force with a university degree



Source: Labour Force Survey

The changing relative position of women and men is one of the most significant labour market phenomena of the 1990s. During this time, women's educational attainment rose, while men's lagged. For example, between 1976 and 1998 women in the labour force with a university degree were increasing at 7.6% per year versus 4.2% for men. By 1998, the gap had disappeared. In fact, the educational advantage held by young men (over young women and older men) in 1976 was reversed.

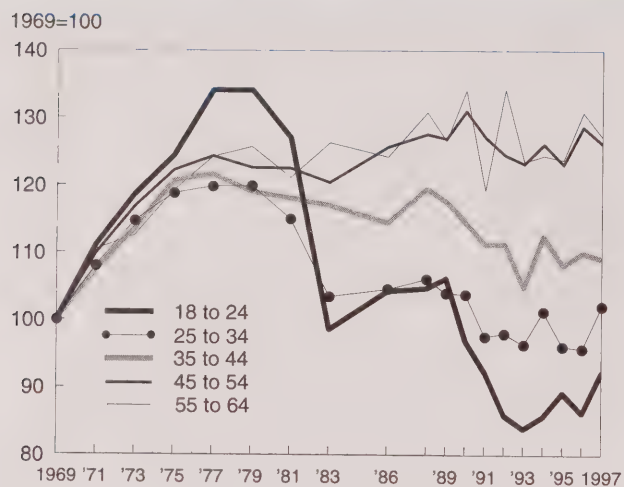
Growth in average real annual earnings, 1986 to 1995



Source: Survey of Consumer Finances

While women continue to earn less than men, the gap has been narrowing. The weekly earnings of full-time working women rose 12% between 1989 and 1996, while they fell marginally for men. The growth in annual earnings of women has far outstripped that of men across the entire earnings distribution. Between 1986 and 1995 (comparable years in the business cycle), annual earnings rose 11% for women and fell 1% for men. Except in the case of women at the bottom of the earnings distribution, earnings growth was consistently between 9% and 11%. Men's earnings fell, except in the top two deciles of the earnings distribution. (Each decile represents 10% of all earners, ranked from lowest to highest.)

Real annual earnings by age, men working full year full time

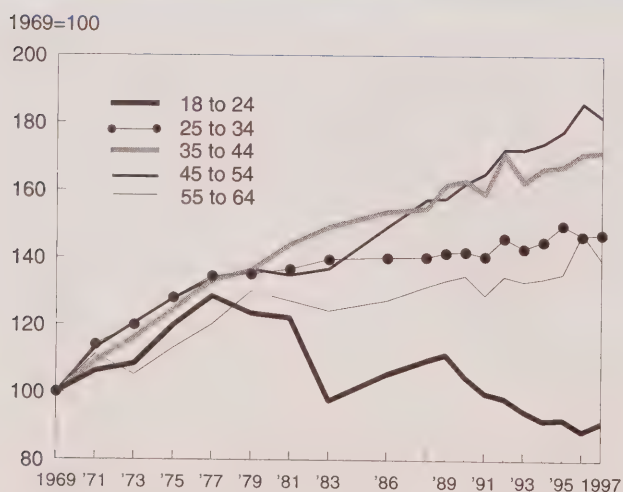


Source: Survey of Consumer Finances

Note: Data are for 1969, 1971, 1973, 1975, 1977, 1979, 1981, 1983, 1986 and 1988 to 1997.

Cross-sectional data clearly indicate an increasing earnings gap between younger and older workers during the 1980s and 1990s, particularly among men. Real annual earnings of men under 35 fell during both recessions, and did not recover until the mid-1990s. Meanwhile, earnings rose among older men, further increasing the wage gap. Rising relative wages for older men did not seem to be due to their work experience. For successive cohorts of men entering the labour market and gaining experience, the age/earnings profile shifted downward. Wages fell for young men entering the labour market, and did not catch up to those of earlier cohorts as the newcomers gained experience.

Real annual earnings by age, women working full year full time

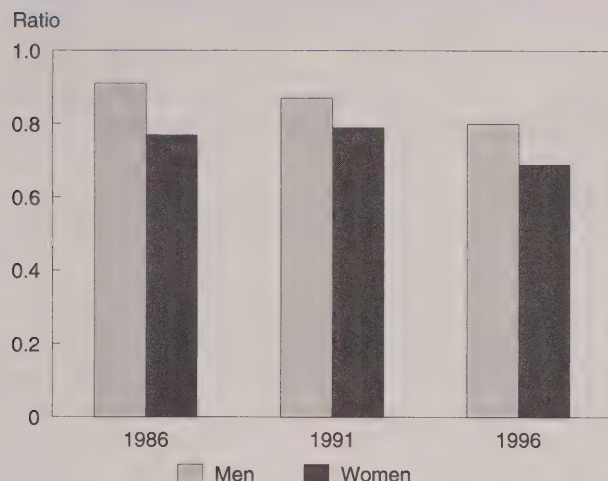


Source: Survey of Consumer Finances

Note: Data are for 1969, 1971, 1973, 1975, 1977, 1979, 1981, 1983, 1986 and 1988 to 1997.

Changes in supply do not explain the drop in relative earnings of youths, as the number of younger workers fell in both absolute and relative terms during the 1990s. The number of 25-to-34 year-olds in the labour force fell, while that of 45-to-54 year-olds increased 4.8% per year. These trends held for both sexes. The earnings of youths may have fallen behind partly because of the rising education of older workers. These changing relative levels of education accounted for about one-quarter of the rising cross-sectional earnings gap between younger and older workers during the 1980s, and for most of it during the 1990s.

Relative employment* rates of recent immigrants

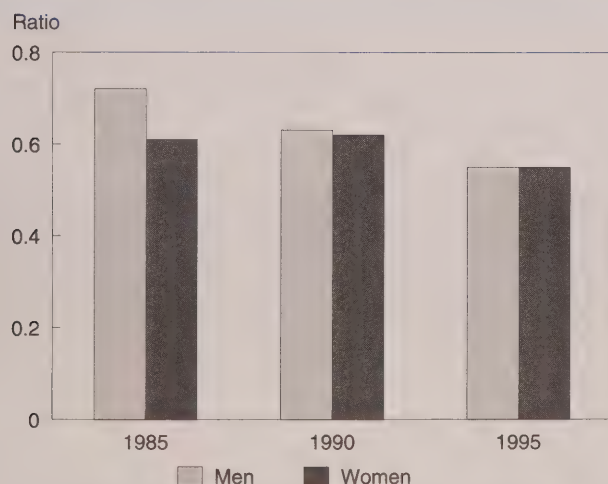


Source: Census of Canada

* Employment rates for university-educated, recent immigrants (arrived up to five years before the dates shown), as a proportion of the rates for their Canadian-born counterparts aged 25 to 44.

In addition to young workers, recent immigrants constitute a growing source of new entrants to the labour market. Their employment rates dipped for each successive cohort over the 1980s and 1990s, particularly among men. Among male university graduates, the share who were employed relative to all workers fell. For both sexes, the employment/population ratio fell steadily, from 91% of their Canadian counterparts in 1986 to 80% by 1996. For women, it fell between 1991 and 1996, while for men it had fallen steadily since the mid-1980s. Just as with young men, immigrants saw a deterioration in their labour market success.

Relative earnings* of recent immigrants

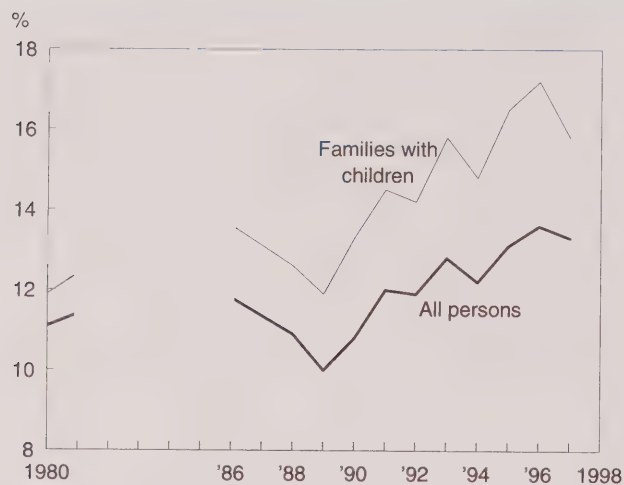


Source: Census of Canada

* Average earnings of university-educated, recent immigrants (arrived up to five years before the dates shown), as a proportion of earnings of their Canadian-born counterparts aged 25 to 44.

As with employment, the fall in immigrants' earnings was similar to that of youths. Again, among employed male university graduates, earnings relative to those of all workers have been falling. The earnings of male immigrants relative to those of Canadian-born workers fell from 72% in 1985 to 55% a decade later. For women, the ratio fell from 61% to 55%. Compositional changes could influence these results, but this seems unlikely, since this particular group (university-educated men and women aged 25 to 44) is comparable through time.

Low income rates*



Source: Survey of Consumer Finances

* Low income cut-off based on after-tax/transfer income.

The rate of low income was higher in 1997 than in 1989 (13% versus 10%). This represents a significant deviation from the 1980s, when rising government transfers to low income families helped stop rates from rising. These trends are even more striking among families with children. Low income rates were stable through the 1980s as significant declines in employment earnings occurred simultaneously with two other changes: transfers rose and families adjusted their lifestyles to reduce low income (through smaller families, delayed childbearing, dual-earner couples, and higher education levels). For low income families with children, social transfers by the early 1990s accounted for two-thirds of family incomes, and employment earnings just one-third, the reverse of the 1970s. By the mid-1990s, however, adjustments in family characteristics had ceased to put downward pressure on the low income rate (that is, the number of dual-earner families was declining, and the number of children per family was stable, as was educational attainment) and transfers fell faster than employment earnings rose. In this environment, the low income rate increased significantly.

Charts and text were adapted from "The labour market in the 1990s" (Parts I & II), which appeared in the January 2000 and February 2000 issues of *Canadian Economic Observer* (Catalogue no. 11-010-XPB) and from *The Performance of the 1990s Canadian Labour Market*, Analytical

Studies Branch research paper no. 148 (Catalogue no. 11F0019MPE). For more information, contact Andrew Heisz, Business and Labour Market Analysis Division, at (613) 951-3748; andrew.heisz@statcan.ca.

Cumulative index

1989–2000

This index lists articles published in Perspectives since its inception. It is updated quarterly (available as a PDF file) and published in the Winter issue.

ABSENCE FROM WORK

Missing work in 1998—industry differences	Autumn 1999
Work absences: New data, new insights	Spring 1998
Work absence rates, 1995	Autumn 1996
Work absences and compensation	Autumn 1996
Missing work	Spring 1995
Absences from work revisited	Spring 1992
Taking their leave	Autumn 1989
On maternity leave	Summer 1989

CONSUMER SPENDING

Update on gambling	Spring 2000
The gambling industry: Raising the stakes	Winter 1998
Spending patterns of couples without children	Summer 1994
Tracking down discretionary income	Spring 1991
Consumer spending in urban and rural Canada	Autumn 1990
Where the money goes: Spending patterns in Canada and the U.S.	Autumn 1990

EARNINGS

Provincial earnings differences	Summer 2000
Earnings of lawyers	Spring 2000
Earnings of physicians	Winter 1999
Women's earnings/men's earnings	Winter 1999
Earnings mobility of Canadians, 1982-1992	Summer 1999
Northern earnings and income	Spring 1997
Do earnings rise until retirement?	Summer 1996
Are service jobs low-paying?	Spring 1996
Women as main wage-earners	Winter 1995
Employment prospects for high school graduates	Autumn 1995
Labour market outcomes for university co-op graduates	Autumn 1995
Recent trends in earnings	Autumn 1995
Adults living solo	Winter 1994

A recession for whom?	Winter 1993
A note on wage trends among unionized workers	Autumn 1993
Seven decades of wage changes	Summer 1993
The changing profile of dual-earner families	Summer 1992
On non-wage labour income	Winter 1991
Are jobs in large firms better jobs?	Autumn 1991
Visible minorities in the Canadian labour force	Summer 1991
Women's earnings and family incomes	Summer 1991
Recent trends in wages	Winter 1990
The price of labour	Autumn 1990
Male-female earnings gap among recent university graduates	Summer 1990
The graduates of '82: Where are they?	Spring 1990
Wives as primary breadwinners	Spring 1990
Working for minimum wage	Winter 1989
Unionization and women in the service sector	Autumn 1989
Bilingualism and earnings	Summer 1989

EDUCATION

The school-to-work transition	Spring 2000
Paying off student loans	Spring 1999
Facing the future: Adults who go back to school	Autumn 1997
After high school...	Summer 1997
Employment prospects for high school graduates	Autumn 1995
Labour market outcomes for university co-op graduates	Autumn 1995
Work experience	Summer 1995
Youths—waiting it out	Spring 1994
Labour market outcomes for high school leavers	Winter 1993
School, work and dropping out	Summer 1993
Women in academia—a growing minority	Spring 1993
A degree of change	Winter 1992
Juggling school and work	Spring 1992

Lifelong learning: Who goes back to school?	Winter 1991
Overview of literacy skills in Canada	Winter 1990
Male-female earnings gap among recent university graduates	Summer 1990
The graduates of '82: Where are they?	Spring 1990

FAMILIES

Working together—self-employed couples	Winter 1999
Employment after childbirth	Autumn 1999
Family income: 25 years of stability and change	Spring 1999
Family income inequality, 1970-1995	Winter 1998
Couples working shift	Autumn 1998
Retirement patterns of working couples	Autumn 1998
Income after separation—people without children	Summer 1998
Stay-at-home dads	Spring 1998
Intergenerational equity in Canada	Autumn 1997
Family income after separation	Summer 1997
Transfer payments to families with children	Autumn 1996
Dual-pensioner families	Autumn 1996
The many faces of unemployment	Spring 1996
Women as main wage-earners	Winter 1995
Families and moonlighting	Summer 1995
Hours of working couples	Summer 1995
Work and low income	Summer 1995
Adults living solo	Winter 1994
High income families	Winter 1994
Left behind: Lone mothers in the labour market	Summer 1994
Spending patterns of couples without children	Summer 1994
Balancing work and family responsibilities	Spring 1994
Family facts (charts)	Spring 1994
Employed parents and the division of housework	Autumn 1993
Female lone parents in the labour market	Spring 1993
Alimony and child support	Summer 1992
The changing profile of dual-earner families	Summer 1992
Marriage, money and retirement	Winter 1991
Family income inequality in the 1980s	Autumn 1991
Who's looking after the kids? Child care arrangements of working mothers	Summer 1991
Women's earnings and family incomes	Summer 1991
Tracking down discretionary income	Spring 1991
Government transfer payments and family income	Autumn 1990
Where the money goes: Spending patterns in Canada and the U.S.	Autumn 1990
Work and relative poverty	Summer 1990
Wives as primary breadwinners	Spring 1990

GOVERNMENT TRANSFER PAYMENTS

Family income inequality, 1970-1995	Winter 1998
Intergenerational equity in Canada	Autumn 1997
Transfer payments to families with children	Autumn 1996
Men retiring early: How are they doing?	Winter 1995
Who gets UI?	Summer 1994
Family income inequality in the 1980s	Autumn 1991
Dependence on government transfer payments, 1971-1989	Summer 1991
Taxes, transfers and regional disparities	Winter 1990
Government transfer payments and family income	Autumn 1990

HEALTH

Long working hours and health	Spring 2000
You wear it well: Health of older workers	Autumn 1996
A job to die for	Summer 1996
Tired workers	Summer 1995
Perceptions of workplace hazards	Spring 1994
Defining and measuring employment equity	Winter 1993
Back injuries at work, 1982-1990	Autumn 1992
Under the influence	Autumn 1990
Disabled workers	Winter 1989

HIGH TECHNOLOGY

Computer programmers	Autumn 1998
The booming market for programmers	Summer 1998
Computers in the workplace	Summer 1997
The future of data dissemination	Summer 1996
Computers in the workplace	Summer 1991
Measuring Canada's international competitiveness	Summer 1990
High technology at work	Spring 1990

IMMIGRANTS

Knowledge workers on the move	Summer 2000
Canada's newest workers	Spring 1995
Defining and measuring employment equity	Winter 1993
The census: One hundred years ago	Summer 1991
Visible minorities in the Canadian labour force	Summer 1991
Gail Cook Johnson speaks out on human resource issues	Spring 1991
Immigrants in product fabricating	Winter 1989

INCOME

Incomes of younger retired women: the past 30 years	Winter 2000
Incomes of seniors	Winter 2000
Income inequality within provinces	Winter 2000

Family income: 25 years of stability and change	Spring 1999
Income transition upon retirement	Winter 1998
Family income inequality, 1970-1995	Winter 1998
Income after separation—people without children	Summer 1998
Family income after separation	Summer 1997
Northern earnings and income	Spring 1997
Transfer payments to families with children	Autumn 1996
Dual-pensioner families	Autumn 1996
Men retiring early: How are they doing?	Winter 1995
Work and low income	Summer 1995
High income families	Winter 1994
Who gets UI?	Summer 1994
Income facts (charts)	Autumn 1993
Investment income of Canadians	Summer 1993
Facing retirement	Spring 1993
Alimony and child support	Summer 1992
Hard at work	Spring 1992
Family income inequality in the 1980s	Autumn 1991
Dependence on government transfer payments, 1971-1989	Summer 1991
Women's earnings and family incomes	Summer 1991
Work and relative poverty	Summer 1990

INDUSTRIES

Update on gambling	Spring 2000
Missing work in 1998—industry differences	Autumn 1999
Job stability	Winter 1998
The gambling industry: Raising the stakes	Winter 1998
Sizing up employment in clothing manufacturing	Spring 1997
Work absence rates, 1995	Autumn 1996
A sure bet industry	Autumn 1996
Are service jobs low-paying?	Spring 1996
Recent trends in earnings	Autumn 1995
Hiring difficulties in manufacturing	Summer 1995
Missing work	Spring 1995
The horseless carriage	Spring 1995
Three large urban areas in transition	Winter 1994
A recession for whom?	Winter 1993
A note on tracking employment in manufacturing	Summer 1993
International employment trends by industry—a note	Summer 1993
The renaissance of self-employment	Summer 1993
Are single industry towns diversifying? A look at fishing, mining and wood-based communities	Spring 1992
Immigrants in product fabricating	Winter 1989
The Canadian auto industry, 1978-1986	Autumn 1989

INTERNATIONAL COMPARISONS

Taxes internationally	Autumn 2000
Income taxes in Canada and the United States	Summer 2000
Knowledge workers on the move	Summer 2000
Self-employment in Canada and the United States	Autumn 1999
An international comparison of employee training	Spring 1998
International survey on adult literacy	Summer 1996
The marginally literate workforce	Summer 1996
International facts (charts)	Summer 1994
International employment trends by industry—a note	Summer 1993
Gail Cook Johnson speaks out on human resource issues	Spring 1991
Labour force participation: An international comparison	Winter 1990
Training the work force: A challenge facing Canada in the '90s	Winter 1990
Where the money goes: Spending patterns in Canada and the U.S.	Autumn 1990
Dependency ratios: An international comparison	Summer 1990
Measuring Canada's international competitiveness	Summer 1990
The distribution of wealth in Canada and the United States	Spring 1990

INTERVIEWS

David Foot discusses career paths	Winter 1994
An interview with Laurence E. Coward	Winter 1993
Dian Cohen on the new economy	Summer 1993
Gail Cook Johnson speaks out on human resource issues	Spring 1991

LABOUR MARKET

Help-wanted Index	Summer 2000
Labour force participation in the 1990s	Autumn 1998
Working overtime in today's labour market	Winter 1997
The labour market: Mid-year review	Every Autumn (1989 to 1997)
The labour market: Year-end review	Every Spring (1990 to 1997)
Employment and industrial development in the North	Spring 1997
Another measure of employment	Winter 1996
Greying of the workforce	Spring 1995
Dian Cohen on the new economy	Summer 1993
Job ads: A leading indicator?	Autumn 1989

LABOUR MOBILITY

Job stability	Winter 1998
An overview of permanent layoffs	Autumn 1997
Changes in job tenure	Winter 1996
Hiring difficulties in manufacturing	Summer 1995
Job-related moves	Winter 1992
Staying put: Job tenure among paid workers	Winter 1992
Workers on the move: Permanent layoffs	Autumn 1992
Workers on the move: Quits	Autumn 1992
Workers on the move: An overview of labour turnover	Summer 1992
Workers on the move: Hirings	Summer 1992

LANGUAGE

Immigrants in product fabricating	Winter 1989
Bilingualism and earnings	Summer 1989

LITERACY

Literacy in the workplace	Summer 1999
International survey on adult literacy	Summer 1996
The marginally literate workforce	Summer 1996
Literacy in the workplace	Spring 1992
Gail Cook Johnson speaks out on human resource issues	Spring 1991
Overview of literacy skills in Canada	Winter 1990
Training the work force: A challenge facing Canada in the '90s	Winter 1990

MEN

Women's earnings/men's earnings	Winter 1999
Working past age 65	Summer 1999
Stay-at-home dads	Spring 1998
Do earnings rise until retirement?	Summer 1996
Men retiring early: How are they doing?	Winter 1995
Employed parents and the division of housework	Autumn 1993
Trading places: Men and women in non-traditional occupations, 1971-86	Summer 1990
Male-female earnings gap among recent university graduates	Summer 1990

OCCUPATIONS

Earnings of lawyers	Spring 2000
Earnings of physicians	Winter 1999
Work patterns of truck drivers	Winter 1999
Private security and public policing	Spring 1999
Computer programmers	Autumn 1998
The booming market for programmers	Summer 1998
The diversity of managers	Winter 1996
Work absence rates, 1995	Autumn 1996
Women in non-traditional occupations	Autumn 1995

Employer-supported training—it varies by occupation	Spring 1994
Unemployment—occupation makes a difference	Winter 1991
Trading places: Men and women in non-traditional occupations, 1971-86	Summer 1990

PENSIONS

Incomes of younger retired women: the past 30 years	Winter 2000
In for the long term: pension plans offered by employers	Winter 2000
Incomes of seniors	Winter 2000
RRSPs in the 1990s	Spring 2000
Savings for retirement: RRSPs and RPPs	Summer 1999
The RRSP Home Buyers' Plan	Summer 1998
RRSP contributions and withdrawals: An update	Spring 1998
Tapping unused RRSP room	Spring 1998
Low incomes and RRSPs	Spring 1997
RRSP participation—the sooner the better	Spring 1997
RRSP withdrawals revisited	Winter 1996
RRSP rollovers	Winter 1996
Dual-pensioner families	Autumn 1996
Pension fact or fiction?	Summer 1996
Men retiring early: How are they doing?	Winter 1995
RRSPs—unused opportunities	Winter 1995
Tax assistance for pensions and RRSPs	Winter 1995
Who's saving for retirement?	Winter 1995
Pension plan potpourri	Summer 1995
Greying of the workforce	Spring 1995
Update on RRSP contributions	Spring 1995
Greying of the workforce (charts)	Winter 1994
RRSP withdrawals	Spring 1994
An interview with Laurence E. Coward	Winter 1993
RRSPs—new rules, new growth	Winter 1993
C/QPP costs and private pensions	Autumn 1993
Facing retirement	Spring 1993
Note on RRSP contributions and payouts	Spring 1993
Employer-sponsored pension plans—who is covered?	Winter 1992
RRSPs—not just for retirement	Winter 1992
Marriage, money and retirement	Winter 1991
On non-wage labour income	Winter 1991
Women and RRSPs	Winter 1991
Are jobs in large firms better jobs?	Autumn 1991
Retirement attitudes, plans and behaviour	Autumn 1991
The pension carrot: Incentives to early retirement	Autumn 1991
Women approaching retirement	Autumn 1991
Dependence on government transfer payments, 1971-1989	Summer 1991

RRSPs: Tax-assisted retirement savings	Winter 1990
Taxes, transfers and regional disparities	Winter 1990
Government transfer payments and family income	Autumn 1990
The performance of trustee pension funds	Spring 1990

PRODUCTIVITY

Exports, GDP and jobs	Winter 1999
Measuring productivity	Spring 1995
About productivity	Spring 1993

REGIONAL ANALYSIS

Income inequality within provinces	Winter 2000
Rural roots	Autumn 2000
Provincial earnings differences	Summer 2000
Payroll taxes—structure and statutory parameters	Summer 2000
Regional disparities and non-permanent employment	Winter 1997
Employment and industrial development in the North	Spring 1997
Northern earnings and income	Spring 1997
A job to die for	Summer 1996
Canada's unemployment mosaic in the 1990s	Spring 1996
Full-year employment across the country	Autumn 1995
Are single industry towns diversifying? A look at fishing, mining and wood-based communities	Spring 1992
Visible minorities in the Canadian labour force	Summer 1991
Taxes, transfers and regional disparities	Winter 1990
Consumer spending in urban and rural Canada	Autumn 1990
Shifting patterns of unemployment distribution since the 1960s	Autumn 1990
Bilingualism and earnings	Summer 1989
Canada's unemployment mosaic	Summer 1989

RETIREMENT

Incomes of younger retired women: the past 30 years	Winter 2000
Incomes of seniors	Winter 2000
Working past age 65	Summer 1999
Saving for retirement: RRSPs and RPPs	Summer 1999
Income transition upon retirement	Winter 1998
Retirement patterns of working couples	Autumn 1998
Measuring the age of retirement	Summer 1997
RRSP rollovers	Winter 1996
Dual-pensioner families	Autumn 1996
Do earnings rise until retirement?	Summer 1996
Men retiring early: How are they doing?	Winter 1995

Greying of the workforce	Spring 1995
Greying of the workforce (charts)	Winter 1994
A note on the recession and early retirement	Winter 1993
An interview with Laurence E. Coward	Winter 1993
Facing retirement	Spring 1993
Marriage, money and retirement	Winter 1991
Retirement attitudes, plans and behaviour	Autumn 1991
The pension carrot: Incentives to early retirement	Autumn 1991
Women approaching retirement	Autumn 1991

TAXES

Taxes internationally	Autumn 2000
Payroll taxes—recent trends	Autumn 2000
Payroll taxes—structure and statutory parameters	Summer 2000
Income taxes in Canada and the United States	Summer 2000
Family income inequality, 1970-1995	Winter 1998
The RRSP Home Buyers' Plan	Summer 1998
Family income inequality in the 1980s	Autumn 1991
Taxes, transfers and regional disparities	Winter 1990
Consumer spending in urban and rural Canada	Autumn 1990
Where the money goes: Spending patterns in Canada and the U.S.	Autumn 1990

TRAINING

Literacy in the workplace	Summer 1999
An international comparison of employee training	Spring 1998
Facing the future: Adults who go back to school	Autumn 1997
A note on the self-initiated training of job-losers	Spring 1994
Employer-supported training—it varies by occupation	Spring 1994
Recent information on training	Spring 1994
Studying on the job	Summer 1992
Apprentices: Graduate and drop-out labour market performances	Spring 1991
Gail Cook Johnson speaks out on human resource issues	Spring 1991
Training the work force: A challenge facing Canada in the '90s	Winter 1990

UNEMPLOYMENT

Unemployment kaleidoscope	Autumn 2000
Obtaining a job	Spring 1999
Looking for work	Autumn 1998
Employment Insurance in Canada: Policy changes	Summer 1998

The redistribution of overtime hours	Winter 1997	Declining female labour force participation	Summer 1994
Facing the future: Adults who go back to school	Autumn 1997	Left behind: Lone mothers in the labour market	Summer 1994
Canada's unemployment mosaic in the 1990s	Spring 1996	Balancing work and family responsibilities	Spring 1994
The many faces of unemployment	Spring 1996	Defining and measuring employment equity	Winter 1993
Who gets UI?	Summer 1994	Employed parents and the division of housework	Autumn 1993
A note on the self-initiated training of job-losers	Spring 1994	Female lone parents in the labour market	Spring 1993
Alternative measures of unemployment	Winter 1992	Women in academia—a growing minority	Spring 1993
A note on Canadian unemployment since 1921	Autumn 1992	A degree of change	Winter 1992
Discouraged workers—where have they gone?	Autumn 1992	Alimony and child support	Summer 1992
Unemployment—occupation makes a difference	Winter 1991	Absences from work revisited	Spring 1992
Then and now: The changing face of unemployment	Spring 1991	Women and RRSPs	Winter 1991
Shifting patterns of unemployment distribution since the 1960s	Autumn 1990	Women approaching retirement	Autumn 1991
Time lost: An alternative view of unemployment	Spring 1990	Who's looking after the kids? Child care arrangements of working mothers	Summer 1991
Unemployment: A tale of two sources	Winter 1989	Women's earnings and family incomes	Summer 1991
"Discouraged workers"	Autumn 1989	Male-female earnings gap among recent university graduates	Summer 1990
Canada's unemployment mosaic	Summer 1989	Trading places: Men and women in non-traditional occupations, 1971-86	Summer 1990
UNIONIZATION		Wives as primary breadwinners	Spring 1990
Non-unionized but covered by collective agreement	Autumn 2000	Unionization and women in the service sector	Autumn 1989
Unionization—an update	Autumn 1999	On maternity leave	Summer 1989
The rise of unionization among women	Winter 1998	WORK ARRANGEMENTS	
A statistical portrait of the trade union movement	Winter 1997	Long working hours and health	Spring 2000
Unionized workers	Spring 1996	Working together—self-employed couples	Winter 1999
A note on wage trends among unionized workers	Autumn 1993	Self-employment in Canada and the United States	Autumn 1999
Are jobs in large firms better jobs?	Autumn 1991	Working past age 65	Summer 1999
Working for minimum wage	Winter 1989	Hours polarization at the end of the 1990s	Summer 1999
Unionization and women in the service sector	Autumn 1989	Couples working shift	Autumn 1998
WOMEN		Home-based entrepreneurs	Autumn 1998
Incomes of younger retired women: the past 30 years	Winter 2000	Moonlighting: A growing way of life	Summer 1998
Women's earnings/men's earnings	Winter 1999	Working at home	Summer 1998
Employment after childbirth	Autumn 1999	Regional disparities and non-permanent employment	Winter 1997
Baby boom women—then and now	Autumn 1999	Working more? Less? What do workers prefer?	Winter 1997
The rise of unionization among women	Winter 1998	Working overtime in today's labour market	Winter 1997
Women entrepreneurs	Spring 1996	Non-permanent paid work	Autumn 1997
Women as main wage-earners	Winter 1995	Job sharing	Summer 1997
Adult women's participation rate at a standstill	Autumn 1995	Work arrangements: 1995 overview	Spring 1997
Women in non-traditional occupations	Autumn 1995	Women entrepreneurs	Spring 1996
Baby boom women	Winter 1994	Non-standard work on the rise	Winter 1995
Work-related sexual harassment	Winter 1994	Full-year employment across the country	Autumn 1995

Families and moonlighting	Summer 1995	Labour market outcomes for university co-op graduates	Autumn 1995
Hours of working couples	Summer 1995	Youths waiting it out	Spring 1994
Work experience	Summer 1995	Labour market outcomes for high school leavers	Winter 1993
Ever more moonlighters	Autumn 1994	School, work and dropping out	Summer 1993
Involuntary part-timers	Autumn 1994	A degree of change	Winter 1992
Jobs! Jobs! Jobs!	Autumn 1994	Juggling school and work	Spring 1992
The hours people work	Autumn 1994	Apprentices: Graduate and drop-out labour market performances	Spring 1991
Voluntary part-time workers	Autumn 1994	Working for minimum wage	Winter 1989
Weekend workers	Summer 1994	Youth for hire	Summer 1989
Working "9 to 5"	Summer 1994		
Balancing work and family responsibilities	Spring 1994		
Flexitime work arrangements	Autumn 1993		
Paid overtime	Autumn 1993		
Work arrangements of Canadians—an overview	Autumn 1993		
Working shift	Spring 1993		
Hard at work	Spring 1992		
A note on self-employment	Winter 1991		
A note on the Work Sharing Program	Winter 1991		
Non-standard work arrangements	Winter 1991		
Moonlighters	Winter 1989		
The changing face of temporary help	Summer 1989		
YOUTH			
Rural roots	Autumn 2000		
Youth volunteering on the rise	Spring 2000		
The school-to-work transition	Spring 2000		
After high school...	Summer 1997		
		MISCELLANEOUS	
		Unemployment kaleidoscope	Autumn 2000
		Youth volunteering on the rise	Spring 2000
		Exports, GDP and jobs	Winter 1999
		Seniors who volunteer	Autumn 1999
		Seasonality in employment	Spring 1999
		The RRSP Home Buyers' Plan	Summer 1998
		Key labour and income facts (charts)	Every issue (from Spring 1996)
		Getting there	Summer 1994
		Labour and income facts (charts)	Winter 1993
		Census facts (charts)	Summer 1993
		The gift of time	Summer 1990

PERSPECTIVES

ON LABOUR AND INCOME

THE COMPREHENSIVE JOURNAL

on labour and income
from Statistics Canada

☐ Yes, I want PERSPECTIVES ON LABOUR AND INCOME
(Catalogue no. 75-001-XPE).

Save
by extending your
subscription!

Save 20%
by subscribing for 2 years!
Only \$92.80 (plus taxes)

Save 30%
by subscribing for 3 years!
Only \$121.80
(plus taxes)

Subscribe to Perspectives on Labour and Income today!



MAIL

Statistics Canada
Circulation Management
120 Parkdale Avenue
Ottawa, Ontario
Canada K1A 0T6



PHONE

1 800 267-6677
Charge to VISA or MasterCard.
Outside Canada and the U.S.,
and in the Ottawa area, call
(613) 951-7277.



FAX

1 800 889-9734
(613) 951-1584



E-MAIL

order@statcan.ca

Please do not send confirmation for phone or fax orders.

Name _____
Company _____ Department _____
Address _____ City _____ Province _____
Postal Code _____ Phone _____ Fax _____

Catalogue No.	Title
75-001-XPE	Perspectives on Labour and Income

ALL PRICES EXCLUDE SALES TAXES.

Canadian clients add 7% GST and applicable PST or HST.

GST # R121491807.

Cheque or money order should be made payable to the Receiver General for Canada.

PF 097042

METHOD OF PAYMENT (Check only one)

☐ Charge to my: ☐ MasterCard ☐ VISA

Card Number _____

Authorized Signature _____

Expiry Date _____

Cardholder (Please print) _____

☐ Payment Enclosed \$ _____

☐ Purchase Order Number _____

Authorized Signature _____

Subscription	Price (CDN \$)	Quantity	Total CDN \$
1 year	58.00		
2 years	92.80		
3 years	121.80		
Subtotal			
GST (7%) - (Canadian clients only, where applicable)			
Applicable PST (Canadian clients only, where applicable)			
Applicable HST (N.S., N.B., Nfld.)			
Shipping charges U.S. CDN \$24, other countries CDN \$40			
Grand Total			

DISCOVER

labour market trends in seconds

When you need a snapshot of the labour market

...when you need quick answers or in-depth analysis
 ...when you need to see historical movements
 ...when you need labour-related data for a presentation or report
 ...you'll find that the *Labour Force Historical Review on CD-ROM* is the perfect solution.

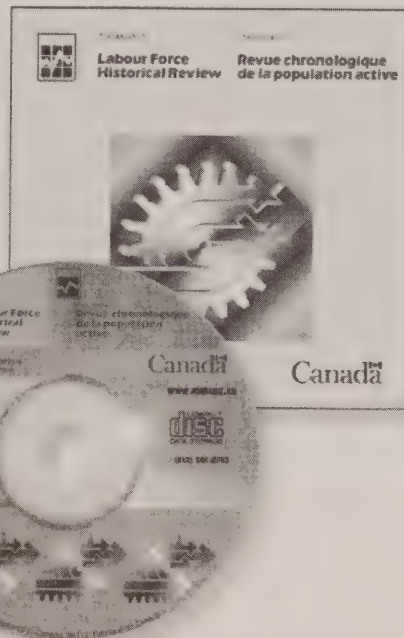
This easy-to-use CD-ROM, issued annually, lets you discover labour market patterns in seconds! Incorporating a user-friendly data browser, the *Labour Force Historical Review on CD-ROM* is an essential tool providing:

Accurate, timely data...

- ✱ actual and seasonally adjusted data series
- ✱ on a monthly or annual basis

...plus historical information...

- ✱ over 20 years of data (from 1976 to 1999)



- ✱ allowing you to quickly spot trends as you browse different chart displays

...in a tremendously useful format!

- ✱ with thousands of cross-classified data series

- ✱ and the functionality for easy export of the data into any spreadsheet package for data manipulation
- ✱ plus effortless analysis of this large library of multi-dimensional statistics

At the click of a mouse, access key variables, such as:

- ✱ employment and unemployment levels and rates
- ✱ demographic characteristics including age, sex, educational attainment and family variables
- ✱ national, provincial, metropolitan areas and economic regions
- ✱ industry, occupation, wages, union membership, job tenure
- ✱ workplace size and hours worked ...and much more.

As researchers, economists, analysts, consultants and planners in both private enterprise and the public sector, you will value this comprehensive information resource for your labour-related questions, analysis or forecasting.

For more detailed information on this CD-ROM, visit our Web site at <http://www.statcan.ca/english/ads/71F0004XCB/index.htm>

The *Labour Force Historical Review on CD-ROM* (catalogue no. 71F0004XCB) is available for only \$195. In Canada, please add either GST and applicable PST or HST. Shipping charges: No shipping charges for delivery in Canada. For shipments to the United States, please add \$6. For shipments to other countries, please add \$10.

To order the CD ROM, CALL 1 800 267-6677, FAX 1 877 287-4369 or MAIL your order to Statistics Canada, Dissemination Division, Circulation Management, 120 Parkdale Avenue, Ottawa, Ontario, K1A 0T6, Canada. You may also order by E-MAIL: order@statcan.ca or contact your nearest Statistics Canada Regional Reference Centre: 1 800 263-1136.

PERSPECTIVES

ON LABOUR AND INCOME

To keep up with ...

- the education levels and the training of the labour force in Canada
- the distribution of income and trends in wages in the country
- updates on research under way in the labour and income field
- the availability of new income and labour market data

... you need

PERSPECTIVES ON LABOUR AND INCOME (Catalogue no. 75-001-XPE) from Statistics Canada.

A yearly subscription to **Perspectives on Labour and Income** (four issues) costs just \$58.

Mail your order to Statistics Canada, Operations and Integration Division, Circulation Management, 120 Parkdale Avenue, Ottawa, Ontario K1A 0T6. Or FAX **1 (613) 951-1584** or **1 800 889-9734**, or call toll free **1 800 267-6677** and use your VISA or MasterCard. E-mail: order@statcan.ca

